



First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

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EDITORIAL COMMENT.

"Newspapers are an essential part of our war organisation."—
(Sir Auckland Geddes, Minister of National Service.)



HE playing off of the soldier by the politician against the Government has reached a stage at which it has become intolerable. Not many days ago it was General Trenchard's resignation which was made the subject of an agitation against the Government. Still a little while longer since it was the retirement of General Robertson from the post of Chief of the General Staff that gave the politicians their chance to attack the Cabinet.

L'Affaire Maurice.

Now it is the indiscretion of the late Director of Military Operations which has given the Opposition its opportunity.

So far as concerns the points raised by General Maurice in his letter to the Press, it does not seem to matter so much whether they are well-founded or not as that the letter has certainly shaken public confidence in the manner in which the war is being conducted. Worse than that, it has—or nearly succeeded in doing—alarmed our Allies, who, with

more than a little reason, gathered the impression that this country is a house divided against itself. The real *gravamen* of the matter seems to us to have been, not that General Maurice disagreed with certain statements made in the House by the Premier and Mr. Bonar Law—statements which we fully believe, with some inside knowledge of the facts, could easily have been reconciled—but that his disagreement was made the occasion for a political attack on the Government. For some little time the truce of God between the parties in Parliament was observed loyally enough, but during the past few months it has become abundantly clear that the group of politicians headed by Mr. Asquith and his henchmen have become tired of being "outs" and are determined, at all costs if their object can only be achieved, to turn out the present administration and get back into office. That they should think for a moment that the country would tolerate another Asquith administration during the war shows how helplessly out of touch with the country and its feeling they—and the whole House of Commons, for that matter—are. We agree that the present Government is far from an ideal one. It has made serious mistakes, but it still possesses the confidence of the country in its conduct of the war. In the Party which aspires to office there is no shred of confidence. It has had its day and failed ignominiously. But that is not precisely the point at issue now. The question which every thinking man is asking now is: How far is the use for political ends of military personages in their differences with the War Cabinet or with their immediate departmental chiefs to be allowed to go? We have had three outstanding cases within as many months, and a few more will of a certainty spell disaster. It cannot be tolerated for a moment that a soldier who is dismissed from an important post, even though he may have been the victim of injustice, shall be allowed to bring forward his grievances in such a manner that capital can be made out of them for the purpose of embarrassing the Government merely to serve the ends of Party. If such an officer has really been treated unjustly in being relieved of or superseded in his duties, he has his clear remedy in an appeal to the Army Council, or if need be to His Majesty. Not that in the case of General Maurice it would appear that this officer wrote his communication to the Press under any sense of grievance. On the

contrary, we do this distinguished general the bare justice of believing that he wrote under the completely wrong-headed impression that, as he put it himself, his duty as a citizen overrode that of the soldier. The point may be a debatable one, but on the face of it the soldier surrenders for the time being the duties of citizenship and accepts the text of the King's Regulations as his rule of life. At least it would appear reasonable to suppose that in a case such as the one under discussion he would refrain from setting forth publicly his views as a citizen until he had submitted his case as a soldier to the people involved. Surely it would have been easy for General Maurice to have drawn the attention of the Premier and the Leader of the House to what he believed to be erroneous or misleading statements, and thus have given them the opportunity of correcting them before rushing into print to give place-seeking politicians the opportunity to precipitate a crisis. As it happens, the affair has considerably strengthened the Government, but the outcome might have been all the other way, and it is to be hoped we shall have no more of this sort of thing.

General Maurice has been placed by the Army Council on the retired list, which means that his career as a soldier has been completely wrecked. It is impossible not to feel a considerable amount of sympathy with an officer of so distinguished a record as he can show to his credit, but it must, we think, be generally agreed that his breach of discipline has been visited with none too heavy a punishment. And, now, what is to happen in the case of Sir John Simon regarding his indiscretion in the matter of using information gained by him as an officer for political purposes? We have not heard that his offence, which is fully as great as that of General Maurice, has been visited with disciplinary consequences to himself. Certainly if the one deserves punishment so does the other. Whatever should happen in the Simon case, the punishment could not have the same effect, since in the one case the career of a fine soldier has been terminated, but in the other nothing of the sort could occur, because the subject of the charge is a lawyer-politician first and a soldier by accident. At the same time, the offence should not be allowed to go without notice. The House of Commons certainly allowed Sir John to know that its sense was against such disreputable manoeuvres, but that counts for very little in professional political circles. What we want to know is: What view is taken by the Chief of the Air Staff?

Business and the State.

There was some plain speaking the other day, at the first meeting of the newly formed Imperial Association of Commerce. This association owes its inception to the conditions created by the war, and is intended to be a rallying centre where business men can secure protection through a powerful body to whose expressions of thought the Government and Parliament must pay attention. Branches are to be formed in every business centre in the country. Lord Inchcape is the president, and the director of the Association is Mr. F. M. Fisher, late Minister for Marine and Trade, New Zealand. On the occasion of the meeting referred to, Sir Charles McLeod occupied the chair and opened the proceedings by reading a letter from Lord Inchcape, in which the latter expressed the opinion that: "Unless the mercantile

community of this country organises itself and shows a strong front against the disposition which is being evinced in Government offices to nationalise everything for all time, it will find itself in a sorry situation, and the commercial supremacy of this country, which has hitherto been the envy of the world, will disappear." With which most business men who have given the question more than a passing thought will, we imagine, find themselves in the most complete agreement.

Sir Herbert Hambling, manager of the London, Provincial and South-Western Bank, remarked that as a financial member of the Council of the Ministry of Munitions, he had been able to get some insight into Government methods, and if they wanted sheer inefficiency, or if they wanted nothing done, commend him to the Civil Servant. They must fight to the bitter end to see that the commerce of this country never came under Government control. His advice was—resist Government interference to the very utmost.

In the first place, we think the new Association is one to be welcomed by the whole business community of the country. It is an organisation that is badly wanted now, and will be even more essential after the war when the time comes for the commercial community to undertake in grim earnest the struggle that is bound to come in the effort to free itself of the octopus tentacles of Government control. That the struggle will be a severe one there is not the slightest doubt. On every hand we see the Government taking into its purview more and more industries and trades every day. No doubt it is very necessary for the successful prosecution of the war that this should be, and for that reason the country yields a willing submission to the legion of Orders and Regulations which so hamper the freedom of commerce. But the community cannot but view with the gravest apprehension the post-war future, because it has learnt by bitter experience that when once the State gets its hands upon any section of industry it seldom lets go without a bitter fight. The war has created new Government departments by the score, every one of which is staffed by people who are, generally speaking, far better off in Government employ than they could by reason of their abilities hope to be in civil employment. They will fight like wild cats to preserve their jobs as permanencies, and will be as hard to get rid of as a bad reputation. Unless they are met by a full-fronted organisation of the commercial community their efforts to stick tight may well be successful.

In this matter of the State control of industry, there might be some arguments in its favour if the general standard of Government administration were less inefficient than it unquestionably is. We agree that a lot of muck is thrown at the Civil Service some of which possibly ought not to stick, but it is nevertheless a fact that the standard of efficiency set in the average Government department would not be tolerated for a month in a concern whose business it is to make profits for its shareholders. That is not a mere loose expression—it is a fact that has been proved over and over again. Was there ever a more scathing indictment of the system and the individual than that of Sir Herbert Hambling, which we have quoted above? And it comes from a man who is not likely to dogmatise on what he knows nothing of at first hand. A leading business man and financial

expert, he speaks of the Civil Service as he has found it during a close inside association, and we must take his views as confirmatory of the whole general charge of inefficiency. Certainly it is not to Government departments, the conduct of whose affairs is a by-word in its inefficiency, that we want to entrust the future of British commerce. The aircraft industry is one that is threatened very seriously by the trend towards nationalisation, as we have pointed out on other occasions, and it seems to us that the Association should make a strong appeal to the aircraft manufacturer who is looking forward to peaceful development after the war, free from the trammels of Government control and interference.

The Season Ticket Ramp.

The recent Order of the Board of Trade, sanctioning an increase in railway season ticket rates is another example of the methods of thought of Government departments. The war has imposed an unparalleled strain on the railways, and it is doubtless essential that the volume of passenger traffic should be reduced, but the manner of effecting the reduction is one that, while it has caused the most intense irritation to the *bona fide* travelling public, is not likely to reduce traffic by a tenth of one per cent. The Board of Trade explains that since the ordinary rates were increased by 50 per cent. sixteen months ago, passenger traffic has actually been greater than it was before, and the number of season ticket holders has materially increased. Therefore, it sapiently argues, if the rates for the latter are put up, traffic will decrease. Never was there a more fallacious argument. Being a Government department, the Board does not see that the increase of traffic has been brought about mainly as a result of the multiplication in numbers of Government employees, who have *ipso facto* been compelled to take out season tickets in order to get to and from their work. Then, the increase in the number of ordinary passengers carried is very largely accounted for by the rapid growth of munition works of one sort and another, each of which connotes an increase in the numbers of people employed, all of whom have to travel between home and work. All this seems to argue that the only effect of the raising of rates will be that middle-class people who are already sufficiently burdened by taxation and the extra cost of living

will be still further mulct, while the railways will have to carry no smaller a volume of traffic, and the well-paid munition worker will continue to travel with a "workman's ticket."

There is another aspect of the Order which will bear looking into. Why is it that it is always the London area which is selected as the victim of these experiments? London was the first to be rationed with coal; it was London on which the food rationing Orders were first imposed; once again London was selected to be rationed with gas and electric light; and now it is still London that has to pay more for its "seasons." Is it, as an evening contemporary suggests, that the London members of Parliament haven't a kick in them, while the Government is afraid of the North of England trades unionism? There must be a reason, we suppose, but it is certainly far to seek.

A Patriotic Effort.

We have received the April issue of a little journal, the *Georgetown Gazette*, which is the "house organ" of the Scottish Filling Factory under the Ministry of Munitions. The journal itself is very well edited and produced, but it is not that to which we intend to refer at length. To us by far the most interesting announcement it contains is one relating to the collection of no less a sum than £2,707 in the course of a single week for the purpose of presenting a battle-plane to the Royal Air Force, the machine to be christened and known as "Georgetown." The Ministry accepted the offer; the money was raised; and a cheque for £2,500 forwarded to the Secretary of State for Air all within the space of ten days—a magnificent effort indeed, when we remember that the sum in question was all subscribed by the workers in the factory. We congratulate the Georgetown workers on their patriotic effort, and commend it to others. We cannot have too many machines for the bitter fighting which is bound to ensue during the coming summer, and large as is the provision made by the Government to supply as many machines as can be turned out in order to repair inevitable wastage and to make the British Air Service overwhelmingly superior to that of the enemy, every additional machine that private effort can provide will form a welcome addition to the aerial strength of the Allies.

Naval Pigeon Service.

THE birds of the Naval Pigeon Service, numbering several thousand, have long since taken a recognised place in the war, and have repeatedly been the means of saving lives at sea.

An air patrol fell in with some German seaplanes, and messages were received at a seaplane station in Flanders. The first was:—"Short shot down 10 miles N.N.E. Nieuport. One Hun down. My tanks shot. French t.b.d. on its way. Send fighters quick." Then followed another pigeon with:—"Am shot down. Hit in tank radiator. Observer dead.

Am unhurt. Please send small craft." A third message was:—"Machine turning over to port. Have jettisoned everything. Am on wing tip. Sea calm. Machine has seemingly steadied. Nothing in sight. I think machine will float a long time. Send small craft at once. Land 'bus has just made one circuit, but I don't think he saw me. My love to my mother. Tell her I am not worrying. If machine sinks I will swim to a buoy close by."

Ninety-five per cent. of messages sent by pigeon have been delivered.

PAPER-RATIONING.

WARNING TO READERS.—As has been foreshadowed for some time, greater official restrictions upon the sale of papers have become necessary, and after June 10th newspapers will not be permitted to be distributed under the scheme known as "Sale or Return." This means that those readers who wish to receive "FLIGHT" regularly, must place a definite order with their bookstall or newsagent for a copy to be reserved, or, as the only alternative, send an order to the Publishing Office, 36, Great Queen Street, Kingsway, W.C. 2, for "FLIGHT" to be sent each week by post. The direct subscription, by P.O.O. or Cheque, is as follows:—

	3 months.	6 months.	12 months.
	s. d.	s. d.	s. d.
United Kingdom ..	7 1	14 1	28 2
Abroad ..	8 3	16 6	33 0

The above is imperative as from June 10th if you wish to get "FLIGHT" each week.

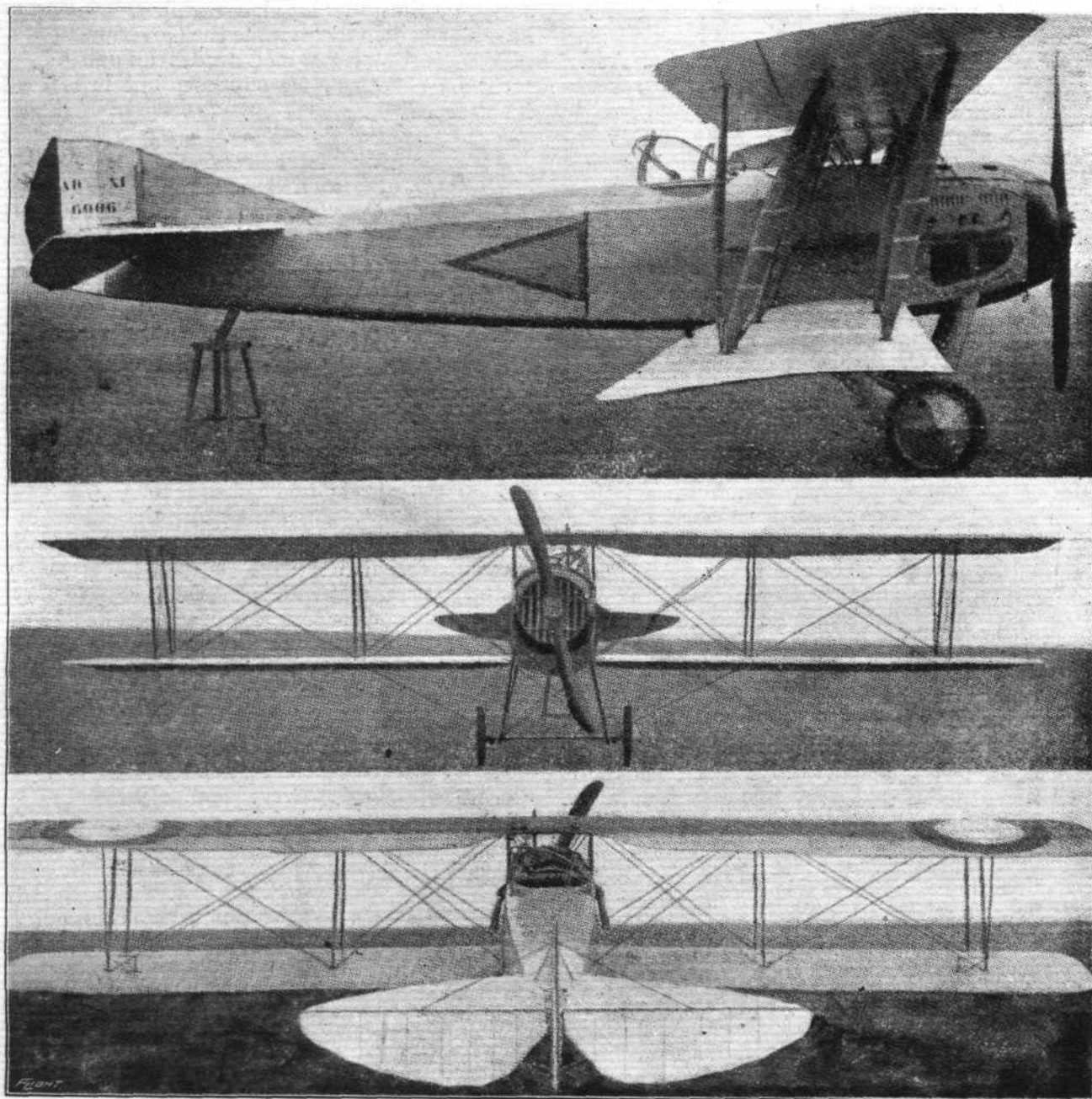
THE SPAD TWO-SEATER.

200 H.P. HISPANO-SUIZA ENGINE.

THE following particulars and illustrations, apparently from an official report on the Spad two-seater, are published in *Flugsport* of April 10th:—

The Spad two-seater, which is shown in the accompanying illustrations, is marked B 6006, and is built under licence in July, 1917, by the Aircraft Works of Ad. Bernard in La Courneuve (Seine). In general design and in constructional details it resembles the single-seaters, but does not have the divided inner

been cut away near the body, and the upper wing has a cut-out portion in the centre. The two spars are placed closer together than those of the lower wing, and the interplane struts converge somewhat upwards. The angle of incidence of the upper plane is 2.8° in the centre, and 2.5° at the tip, while the lower plane has a uniform angle of 1.5° . The lift wires are in duplicate, and in order to reduce head resistance, the space between them is filled up with strips of wood.

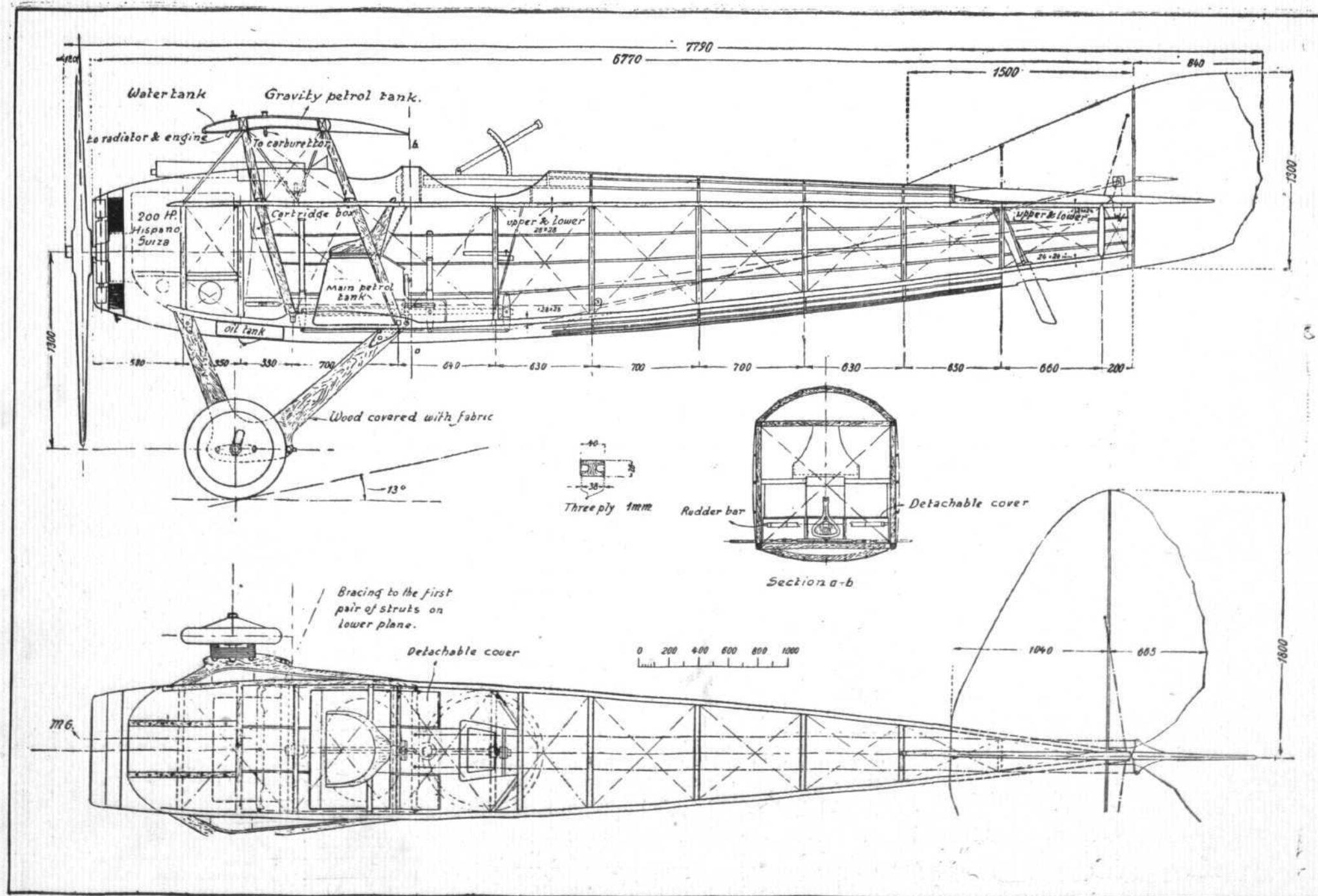


The Spad two-seater, 200 h.p. Hispano-Suiza engine.

interplane struts usually found on these. It is built as an ordinary two-strutter. The spars of the lower wings are braced to the under-carriage from the point of attachment of the inner pair of struts. The upper wing, which runs right through, has a span of 11.22 metres, and a chord of 1.53 metres, while the lower wing has a span of 10.90 metres and a chord of 1.43 metres. The gap is 1.335 metres and the stagger 0.4 metre. There is no dihedral angle, but both upper and lower wings are swept back, the angle being 174° . In order to give a better view, the lower wings have

The landing wires are single. A drift cable runs, from the junction of the inner interplane strut to the upper front spar, to the point of attachment of the front under-carriage strut. The interplane struts, which are of streamline section, are made of wood. Their fittings are attached to a steel tube carried inside the strut.

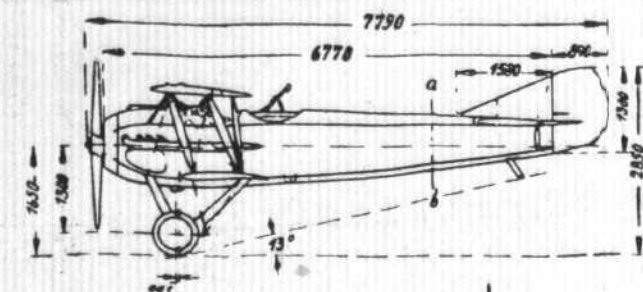
The spacing of the ribs is 190 mm. in the top wing and 175 mm. in the lower wing. Between the ribs there are false ribs on the upper surface running from leading edge to front spar. The fabric is tacked to



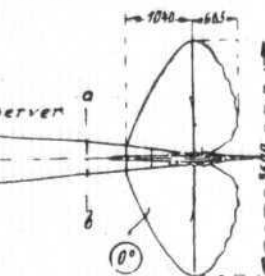
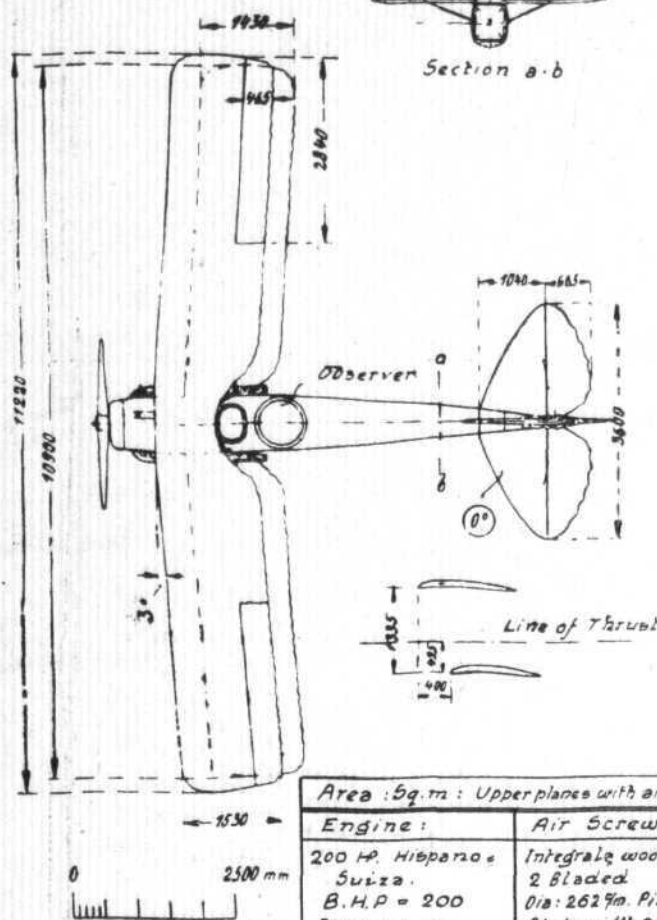
The Spad two-seater S. XI, 200 h.p. Hispano-Suiza engine.

SPAD.S.XI.

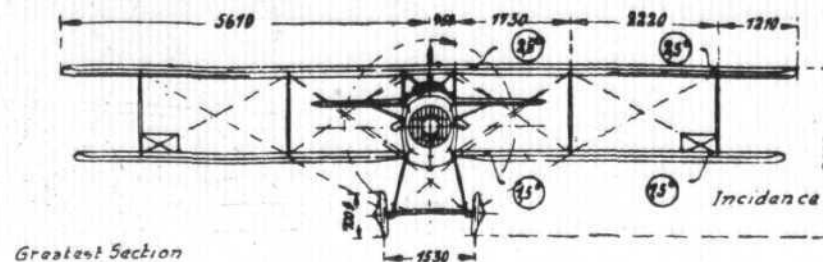
Built by: Etablissements Ad
Bernard, La Courneuve (Seine).



Section a-b



Line of Thrust

Greatest Section
Area 0.9 m²

Body: wire braced girder
Stern-Post Longarons: Spruce
Height 450 mm Body Struts: Spruce
Width 50 mm Bracing: Steel-wire
Covering: fabric

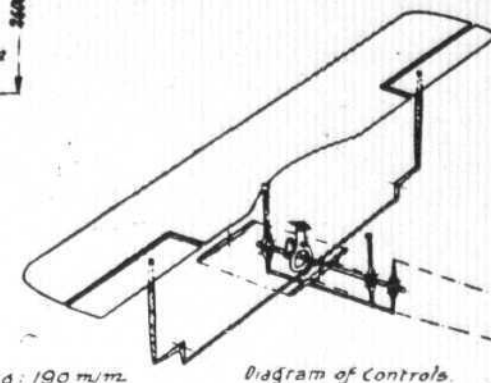
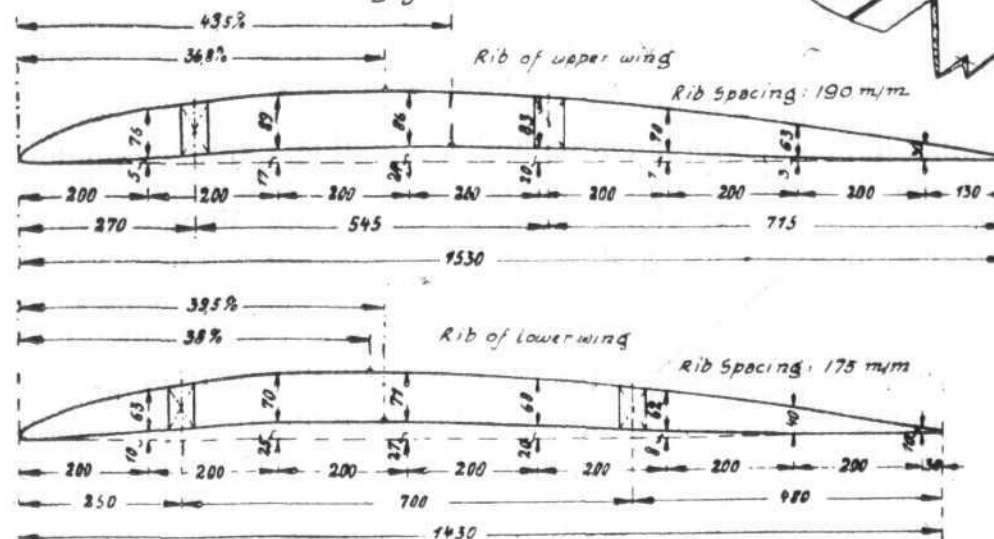
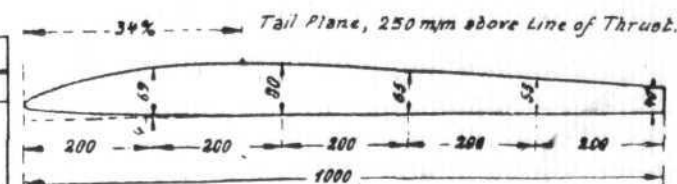


Diagram of Controls

Area: 59 m²: Upper planes with ailerons: 16.3; Lower: 13.5; Total Area: 29.8.

Engine:	Air Screw:	Radiator:	Undercarriage:
200 H.P. Hispano-Suiza. B.H.P. = 200 2000 r.p.m.	Integral wood 2 Bladed Dia: 262 mm. Pitch 160 mm Blade width 209 mm. 1500 r.p.m.	in front; contents with motor, tank and piping: 35 L.	Struts: 35 x 125 wood Shock Absorbers: Rubber. Travel 125 mm. Tyres: 700 x 150 mm. Hub length: 151 mm. Internal Dia: 56 mm.



The Spad two-seater S. XI, 200 h.p. Hispano-Suiza engine,

some more strongly constructed ribs, and is, in addition, stitched to ribs and to the wire forming the trailing edge. On the under surface, near the trailing edge, there are eyelets which serve to equalise the pressure and to drain any moisture out of the wing. Wing and body covering are painted a yellowish white.

Non-balanced *aileron*s are hinged to false spars in the upper plane. They are operated by means of pull and push rods which rest in the lower plane behind the rear spars, and the movement of which is transmitted through cranks at the lower ends of the outer struts, to vertical struts pivotted to the lower surface of the *aileron*.

The body, which is of the usual construction, with four *longerons*, is rounded off top and bottom by formers and stringers. The *longerons* have a rectangular section, while the vertical and horizontal body struts are spindled out to an I section, and are reinforced by plywood. A trap-door in the floor behind the observer's cockpit provides access to the interior of the body.

The stabilising and control surfaces are of the usual Spad type. The tail plane, which runs right across the body, and has both sides cambered, is attached to the upper *longeron* at an angle of incidence of 0°. To its trailing edge, the divided elevator is hinged by means of a steel tube. In order to reduce resistance, the cranks are placed in the centre inside the body and vertical fin.

The machine is provided with dual control. For operating the *aileron*s, the movement of the control shaft is transmitted by means of a lever, to a rocker supported in a partition between pilot's and observer's cockpits. The rods—which rest in the bottom wing—engage with a downward projection of this rocker. The observer's control lever is in the form of a telescopic tube, whose upper part is forced upwards by a spiral spring, or pressed down when not in use, and held in position by a bayonet joint. When extended, its length measured from the pivoting point is 53 centimetres, and when telescoped it measures 36 centimetres. The rudder bar in the observer's cockpit can be covered over with detachable covers, to guard against accidental use. The V form under-carriage struts are made up of several layers of wood glued together, and the whole covered with fabric. Diagonal bracing is employed in both front and rear bays. The two stub axles rest between two cross tubes covered with fabric, and move in slots in the struts. The travel is 125 mm. The VEE type Hispano-Suiza engine, which develops about 200 h.p. at 2,000 r.p.m., rests on engine bearers which are connected up to the body *longerons* by means of transverse supports of three-ply wood, and angle pieces pressed out of aluminium. The two-bladed air screw is geared down, by means of gearing incorporated with the engine in the ratio 4:3. The exhaust gases are carried away by collectors on each side of the body extending to behind the pilot's seat.

A pressure petrol tank with a capacity of 140 litres forms the pilot's seat, while a gravity tank holding 10 litres is mounted in the upper wing, between the spars.

Difficulties of the German Air Service.

GERMAN airmen taken prisoner lately say that they are now having great difficulty in replacing the *personnel*, their Air Force having lost some 700 pilots and observers since the beginning of the offensive on March 21st, says the *Times* correspondent at the Front. One reconnaissance flight alone has lost 130 of its men. They speak with the greatest admiration of British airmen, but mitigate their compliments by declaring that our machines are better than theirs—

The oil tank, which holds 15 litres, rests on the floor of the body behind the engine. The bottom of the oil tank has pressed on it ribs for cooling the oil. The fuel capacity is sufficient for a flight of about 2 hours' duration.

The radiator, which is provided with shutters, forms the nose of the *fuselage*. A reservoir connected with the radiator is built into the upper wing in front of the front spar. Any steam or excess water is carried off underneath the body by means of an overflow and a pipe.

The pilot's seat, which as in all Spad aeroplanes is kept very narrow, is separated from the engine by a linen curtain. In front of it is a wind screen divided into three parts and framed in aluminium.

Of instruments, &c., there are as follows:

On the right: The starter and the hand operated air pump. In the centre: Two switches, one three-way cock for pressure tank and connecting up with either hand or motor air pump, one three-way cock handle for turning on or off the petrol from tank to carburettor, one tap for turning the motor air pump off from the pressure tank, one manometer, and the revs. indicator.

On the left: The gas lever, lever for regulating the mixture, and lever for operating the radiator shutters.

There is no provision made for advancing or retarding the magneto. The instruments are to a certain extent badly arranged. Thus the revs. indicator is placed with its dial horizontal and so that the pilot sees the figures upside down.

In the observer's seat are, in addition to the dual controls, two switches, one gas lever, and one lever for regulating the mixture, so that, apart from the petrol controls, the observer can look after the engine. Wireless installation is not fitted, although antennae wires are provided in the body.

The armament consists of a fixed Vickers machine gun mounted above the body, for the pilot. The gun is operated by a push-rod from the right hand cam shaft. The trigger is on the control lever. The observer is armed with two Lewis machine guns coupled together. Six ammunition drums can be carried in the observer's cockpit, suitable brackets being provided.

The weight of the machine empty, but including the cooling water, was ascertained to be 765 kg. A notice on the rudder gives the useful load (*poids utile*) as 255 kg. and the fuel weight (*poids combustible*) as 120 kg. This gives a total weight of 1,140 kg., so that the weight per sq. m. (the area is 29.8 sq. m.) is $\frac{1140}{29.8} = 38.5$ kg., and the weight per h.p. is $\frac{1140}{200} = 5.7$ kg.

Item Weights.		Loading.	
	Kg.		Kg.
Motor	225.0	Pilot and observer ..	170.0
Cooling water ..	33.0	Armament	81.5
Wings	167.9	Instruments, &c. ..	3.5
Elevator and rudder	19.9	Fuel	120.0
Body, &c.	319.2		
	765		375
		Unit weight of wings	167.9 :
		29.8 = 5.64 kg./sq. m.	

all of which is only evidence that their moral is badly shaken.

Lieutenant von Richthofen Injured.

It is reported that Lieut. Baron von Richthofen, brother of the Capt. Baron von Richthofen, who was recently killed, and who was said to have succeeded to the command of the "circus," has had his skull fractured from a fall of his machine after a fight in the Somme valley, and will be unable to fly again.

HONOURS.

It was announced in a supplement to the *London Gazette* that the King has been graciously pleased to approve of the following awards to the undermentioned officers in recognition of their gallantry and devotion to duty in the Field:—

Bar to the Military Cross.

Second Lieutenant (Temp. Captain) DOUGLAS JOHN BELL, M.C., R.F.C., Spec. Res.—For conspicuous gallantry and devotion to duty. He has led his formation with great skill and has destroyed three enemy aeroplanes and driven down two others, one of which was seen to be completely out of control. The high state of efficiency which his flight has attained is due to his splendid example and fearless leadership. (M.C. gazetted 18th June, 1917.)

Captain WILLIAM SPURRETT FIELDING JOHNSON, M.C. Yeo., and R.F.C.—For conspicuous gallantry and devotion to duty. Whilst escorting machines of another squadron which were engaged in bombing work, with one other officer he attacked ten enemy scouts. He destroyed two of them and forced another to land. On another occasion, when leading a patrol of six machines, he attacked ten enemy scouts. He destroyed one, and his patrol accounted for three others. A few minutes later, in conjunction with another officer, he destroyed an enemy two-seater machine of a new type. As a flight commander he showed great skill and by his daring and good leadership set a splendid example to the officers of his flight. (M.C. gazetted 3rd July, 1915.)

Lieutenant SIDNEY STEVENSON JONES, M.C., S. Lancashire Regiment and R.F.C.—For conspicuous gallantry and devotion to duty as an observer. He took part in two long distance bombing raids and in raids on enemy aerodromes. He carried out several long distance reconnaissances over the enemy's lines, taking a large number of photographs, from which valuable information was obtained. On one occasion, when his machine caught fire at a height of 4,000 feet, and was wrecked on landing, he showed great promptitude and presence of mind in extricating the pilot and extinguishing his clothes, which were on fire. He always showed great skill and gallantry, and set an excellent example to the observers of his squadron. (M.C. gazetted 1st January, 1917.)

Temp. Captain FRANK GRANGER QUIGLEY, M.C., Gen. List and R.F.C.—For conspicuous gallantry and devotion to duty in aerial combats. He destroyed five enemy machines and one balloon, and drove down four enemy machines out of control. He showed splendid courage and initiative. (M.C. gazetted 18th February, 1918.)

The Military Cross.

Temp. Captain CHARLES HERBERT BREWER, Bedford Regiment and R.F.C.—For conspicuous gallantry and devotion to duty. He set out to make a special railway reconnaissance, and though the weather conditions became very bad, he continued his task with the greatest determination. His engine began to fail when he was a long distance over the enemy's lines. By skilful piloting he succeeded in crossing the enemy's trenches, but the machine crashed in No Man's Land, and turned completely over. Heavy machine gun fire was opened by the enemy, and though his jaw was broken, he extricated the observer, who was pinned under the machine, and was unconscious, and dragged him to a shell hole in the face of the enemy's fire. He showed splendid courage and resource.

Lieutenant THOMAS WALFORD CAVE, R.F.A., attached R.F.C.—For conspicuous gallantry and devotion to duty. While engaged in taking photographs of an enemy area, he was slightly wounded by anti-aircraft fire. In spite of this and the enemy's fire seventeen photographs were taken. Later, while he was again taking photographs over the enemy's lines, his machine was attacked by twelve enemy machines. He shot down one of them completely out of control, after which several photographs were taken. On three occasions, in the course of flights lasting four hours or more, he ranged a siege battery most effectively on hostile batteries, with the result that several gun-pits were destroyed and three explosions were caused. He showed splendid determination and initiative.

Temp. Second Lieutenant JOHN STANLEY CHICK, Gen. List and R.F.C.—For conspicuous gallantry and devotion to duty. While leading a patrol of four machines over the enemy's lines he attacked an enemy two-seater machine, which his observer drove down completely out of control. Shortly afterwards the patrol engaged nineteen enemy machines; he dived on to the uppermost machine, and drove it down in a series of spins and sideslips completely out of control. He then attacked two others and brought them down in the same manner, while his observer drove down another out of control. On another occasion, his formation, consisting of five machines,

attacked twenty-five enemy aeroplanes. He destroyed one of the enemy, and drove down another out of control. He set a magnificent example of courage and skill.

Second Lieutenant FREDERICK NORMAN SMITH CREEK, D.L.I., and R.F.C.—For conspicuous gallantry and devotion to duty. He carried out several successful reconnaissances of enemy aerodromes and railways, and obtained valuable information often under the most difficult weather conditions. On one occasion he took several photographs of an enemy aerodrome though he was attacked by an enemy machine and subjected to anti-aircraft fire. He displayed the greatest skill and determination.

Temp. Second Lieutenant FREDERICK HARRY DAVIES, Gen. List and R.F.C.—For conspicuous gallantry and devotion to duty. Whilst on artillery observation duty he engaged a hostile scout, which he succeeded in sending down out of control. He then continued to observe for the shoot, and successfully accomplished his task. Later, whilst again on artillery patrol, though attacked by five hostile aeroplanes, he, by successful manœuvring, enabled his observer to fire several bursts into the leader of the formation, whose machine was seen to go down in a vertical nose dive and crash to earth. Continuing the fight against the remaining four hostile machines, he eventually forced them away, and succeeded in ranging on and neutralising three hostile batteries. He set a magnificent example of skill and determination.

Temp. Lieutenant AUSTIN LLOYD FLEMING, R.F.C.—For conspicuous gallantry and devotion to duty. He attacked a formation of three enemy machines, and forced the leading machine, which was a two-seater, to land, although the other two were attacking him from behind. He then attacked and destroyed another of the enemy machines, and engaged the third, which succeeded in escaping. He destroyed four enemy machines during one month, and showed splendid courage and skill on many occasions.

Temp. Captain JOHN BERTRAM FOX, Gen. List and R.F.C.—For conspicuous gallantry and devotion to duty. During a period of two months he led his formation on six long-distance bombing raids into enemy territory. On the last occasion, though engaged by three separate hostile formations, he dropped his bombs with excellent effect over his objective and brought the whole of his formation back to the aerodrome intact. His formation accounted for three enemy aeroplanes destroyed and four driven down out of control. He has carried out upwards of 40 successful operations, his skill and leadership being of the highest order.

Second Lieutenant WILLIAM LEEMING HARRISON, R.F.C., Spec. Res.—For conspicuous gallantry and devotion to duty in aerial fighting. He destroyed two enemy machines and drove down others out of control. He always showed a splendid spirit of dash, keenness and tenacity, coupled with determination and skill in attacking enemy aircraft.

Second Lieutenant (Temp. Captain) GEOFFREY FORREST HUGHES, R.F.C., Spec. Res.—For conspicuous gallantry and devotion to duty. While leading his formation over the enemy's lines he was attacked by twelve enemy machines, two of which he shot down. On the following day, when in charge of a patrol, he attacked seven enemy triplanes, drove down one out of control, and forced three others to land. On another occasion, while in charge of a patrol, he was attacked by a large number of enemy scouts; owing to his skilful flying his observer succeeded in shooting down one of the enemy machines, which broke up in the air. He always showed the greatest coolness and courage in action, and, as a flight-commander, led his formation with splendid courage and determination.

Temp. Second Lieutenant PETER AITKEN MACDOUGALL, Gen. List and R.F.C.—For conspicuous gallantry and devotion to duty. He always showed great initiative and skill in attacking enemy aircraft, and drove down or destroyed several enemy machines. On one occasion while on patrol he encountered three enemy two-seater machines, and, though his engine was giving trouble, he attacked them single-handed and drove one of them down out of control, having shot the observer. On another occasion, after driving down an enemy machine, he attacked and silenced a battery of six guns which were firing on our machines. His example of pluck and determination was of the utmost value to the squadron.

Second Lieutenant (Temp. Lieutenant) JOHN FINLAY NOEL MACRAE, Gen. List and R.F.C.—For conspicuous gallantry and devotion to duty. While on an offensive patrol he attacked an enemy machine and drove it down damaged. On the same day he took part in a bombing raid at a low altitude on an enemy aerodrome, and secured a direct hit on one of the hangars. While returning, he engaged enemy troops and transport on a road, causing casualties and confusion.

He then climbed and attacked an enemy kite balloon, and, in spite of intense fire, succeeded in forcing it down damaged. He showed splendid courage and initiative.

Second Lieutenant (Temp. Captain) MAURICE EDMUND MEALING, Shropshire Light Infantry and R.F.C.—For conspicuous gallantry and devotion to duty in aerial fighting. He destroyed three enemy machines and drove down three out of control. He also drove down an enemy balloon in flames. He always showed a splendid spirit of courage, keenness and determination.

Temp. Captain GUY BORTHWICK MOORE, Gen. List and R.F.C.—For conspicuous gallantry and devotion to duty. He led a patrol to attack hostile balloons. The patrol drove down three balloons in a collapsed condition, one of which he accounted for himself. He has also destroyed three enemy aeroplanes and driven down three others out of control. He has always shown splendid courage and resource.

T. 2nd Lieut. EVAN PYBUS, Gen. List and R.F.C.—For conspicuous gallantry and devotion to duty. He carried out valuable photographic reconnaissances of enemy areas. Though on one occasion he was attacked by twelve enemy machines, he succeeded in taking the required photographs. On three occasions, in the course of flights lasting four hours or more, he ranged a siege battery most effectively on hostile batteries, with the result that several gun-pits were destroyed and three explosions were caused. He showed splendid determination and initiative.

T. 2nd Lieut. HARRY NOEL CORNFORTH ROBINSON, Gen. List and R.F.C.—For conspicuous gallantry and devotion to duty. While on an offensive patrol he had trouble with his petrol pressure and was forced to turn back towards our lines. On his way back he saw seven enemy scouts attacking two of our artillery machines. He immediately dived on to the enemy and drove one of them down. During this operation one of his guns jammed. The enemy still continued the attack and he again dived on them, but his remaining gun also jammed. Though both his guns were out of action and he had very little petrol left, he continued to dive on the enemy repeatedly and eventually drove them away. He showed splendid courage and resource.

T. Capt. EDMUND ROGER TEMPEST, Gen. List and R.F.C.—For conspicuous gallantry and devotion to duty. He attacked a formation of seven enemy machines, firing on one from a distance of a few feet and destroying it. On another occasion with his patrol he engaged 13 enemy machines. Though both his guns were out of action, he continued fighting for 15 minutes in order to enable the rest of his patrol to keep up the fight. Having driven off the enemy, he brought his patrol back safely. He showed splendid courage and initiative.

T. Capt. JOHN LIGHTFOOT TROLLOPE, Gen. List and R.F.C.—For conspicuous gallantry and devotion to duty. During a period of three months he has engaged and brought down completely out of control four hostile machines, and has sent

down crashing to earth three others. On all occasions he has displayed the greatest courage, determination and skill, and it is largely due to his fine leadership that the flight under his command has contributed so much to the marked success of the squadron.

T. 2nd Lieut. HAROLD JOHN WALKERDINE, Gen. List and R.F.C.—For conspicuous gallantry and devotion to duty. Whilst escorting machines of another squadron, who were engaged on low bombing work, he encountered ten hostile scouts, two of which he succeeded in crashing to earth. He has at all times, by his conspicuous skill and gallantry, set an excellent example to his squadron.

Lieut. WILLIAM LEWIS WELLS, Middlesex Regiment and R.F.C.—For conspicuous gallantry and devotion to duty. On four occasions during three months he has been engaged with superior enemy formations, and has brought down completely out of control five hostile machines and sent down one other crashing to earth. He has displayed the greatest gallantry, courage, and determination in dealing with enemy aircraft.

Lieut. (T. Capt.) ROBERT DODDS, Cent. Ontario Regiment and R.F.C.—For conspicuous gallantry and devotion to duty. He has destroyed or driven down eleven enemy machines. On one occasion while on a one-machine patrol he attacked three enemy scouts, but owing to his gun jamming he was forced to withdraw from the attack. Though under heavy fire from the pursuing enemy he succeeded in remedying the defect, and then turned and attacked the enemy again. He destroyed one of them and drove down another out of control. Later, he led a bombing raid on an enemy aerodrome, and under intense machine gun fire from the ground dived to within 100 ft. of the hangars before releasing his bombs. Though his machine was damaged he remained at a height of 200 ft. until the rest of his formation had dropped their bombs. His magnificent example of pluck and determination was of the greatest value to the squadron.

Lieut. ARTHUR BRADFELD FAIRCLOUGH, Canadian M.G. Coy. and R.F.C.—For conspicuous gallantry and devotion to duty. During four months he has destroyed four enemy machines, and has driven down two others completely out of control. When engaged with hostile aircraft he has at all times displayed the utmost dash and courage.

Lieut. KENNETH WILLIAM JUNOR, Canadian M.G. Corps and R.F.C.—For conspicuous gallantry and devotion to duty in aerial fighting. He destroyed two enemy machines and drove down two others out of control, which crashed on landing. He always showed the greatest courage, skill and resource.

Lieut. ROBERT WILLIAM MCKENZIE, Australian F.C., attd. R.F.C.—For conspicuous gallantry and devotion to duty. As a result of engaging hostile aircraft during four months, he on four occasions has destroyed a total of four hostile machines. He has also carried out numerous low-flying reconnaissances, in which he has bombed and engaged with machine-gun fire enemy formations. He has at all times displayed marked determination and devotion to duty.

The Constitution of the Air Council.

THE following order in Council amending the constitution of the Air Council was published in the *London Gazette* on May 14th :—

Whereas by an Order in Council, dated the 21st day of December, 1917, as amended by an Order in Council, dated the 2nd day of January, 1918, provision is made with respect to the Constitution of the Air Council, and the manner of the appointment of the Members thereof :

And whereas it is expedient that the said Orders in Council should be amended in manner hereinafter appearing :

Now, therefore, His Majesty is pleased, by and with the advice of His Privy Council, to order, and it is hereby ordered, as follows :—

(1) The Parliamentary Under-Secretary of State shall be Vice-President of the Air Council, and Article 2 of the last-mentioned Order in Council is hereby revoked.

(2) The Deputy Chief of the Air Staff shall not be a member of the Air Council, and so much of the first-mentioned Order in Council as relates to the Deputy Chief of the Air Staff (that is to say, in Articles 1 and 2 thereof, the words "the Deputy Chief of the Air Staff," and in Article 3, Paragraph (b)) is hereby revoked.

(3) For the provision in the first-mentioned Order in Council which requires that there shall be included in the Air Council two additional Members, there shall be substituted a provision that there may be included in the Air Council such additional Members (if any), not exceeding two, as may be appointed by the Secretary of State.

British Bombing in April.

THE following is a comparative statement of the number of bombs dropped by British airmen in France behind the enemy's lines, and of those dropped by the enemy in the area occupied by British troops during April, 1918 :—

	British.	Enemy.
By day	17,867	687
By night	6,033	1,346
Total	23,900	2,033

The King's Certificate.

It was announced on May 15th that the King has been pleased to approve of the award of certificates, similar to those to be issued to the Navy and Army, to members of the Royal Air Force, discharged through wounds or disabilities incurred on active service or distinctly attributable to the enemy.

Particulars of these certificates will be announced at an early date.

Constable's Pluck During Air Raid.

POLICE-CONSTABLE GEORGE LEGROVE, of the City of London Police, was presented by the Commissioner of Police for the City of London, at the City Police Office, on Monday, with a certificate and £5 awarded him by the trustees of the Carnegie Hero Fund. Legrove rendered "first aid" to a woman who was injured by an explosive bomb dropped by enemy aircraft. He was himself severely injured in the leg by the same bomb, but he continued to help the woman until he collapsed.

THE FOKKER TRIPLANE.

(Continued from page 512.)

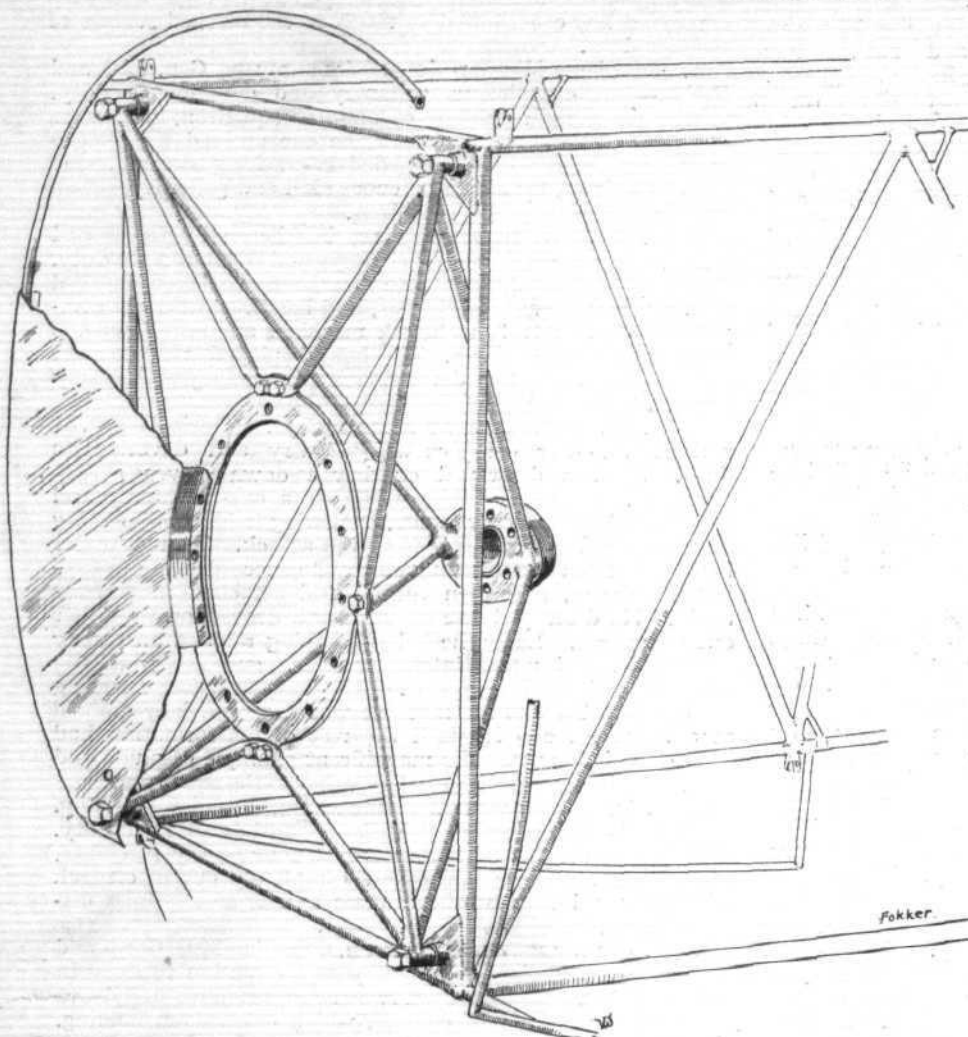


Fig. 6.—General arrangement of the engine mounting on the Fokker triplane.

THE engine mounting on the Fokker triplane has already been briefly indicated in our side elevation and plan of the *fuselage* (see page 474 of our May 2nd issue). Fig. 6 is a perspective sketch further illustrating the general arrangement of the engine support. The main engine plate, which is in the form of a ring, is supported on a structure of steel tubes arranged in the shape of a four-pointed star. The rear engine support, on the other hand, is mounted on a pyramid of steel tubes, running to the same four points, *i.e.*

the corners of the *fuselage*, as the four points of the star. The attachment to the body is shown in detail in Fig. 7. The apex of the three-legged pyramid formed by the two front bearer tubes and single rear bearer tube is welded to a longitudinal horizontal lug. This lug is in turn supported by a long bolt passing through a hole in a triangular corner plate welded to the vertical and transverse body struts. Thus by undoing the four bolts the whole engine mounting may be removed bodily. This is, of course, an advantage, but structurally the arrangement can only be considered very weak. Ultimately, it will be seen, a welded joint—that of the triangular corner plate to body struts—or, more correctly speaking, four of them, is relied upon to support the engine. This can scarcely be considered anything except very bad practice. In conformity with usual practice there is an aluminium capping plate covering the front engine bearer. This plate is held in place by the four bolts carrying the engine mounting, the bolts passing through and being locked on the front face of the aluminium plate, where they are easily accessible.

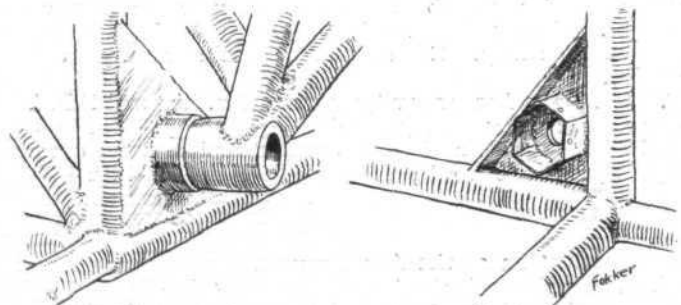
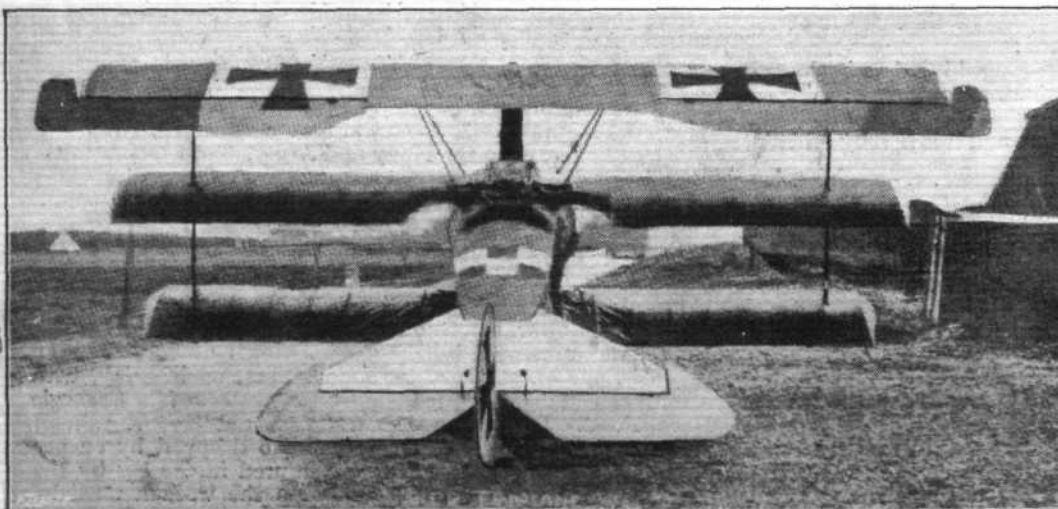


Fig. 7.—Details of the engine mounting on the Fokker triplane.



The Fokker triplane from behind.

The under-carriage of the Fokker triplane is of the now usually employed Vee type, but it differs in several respects from standard practice. Thus the fairing round the axle is of much larger dimensions than those usually obtaining, so much so that it constitutes in reality a supporting surface of an area

the fragments left intact we are inclined to think that the three-ply casing was not a symmetrical stream-line section, but rather a section approaching somewhat to that of the main planes, with the exception, possibly, that it had a flat under-surface

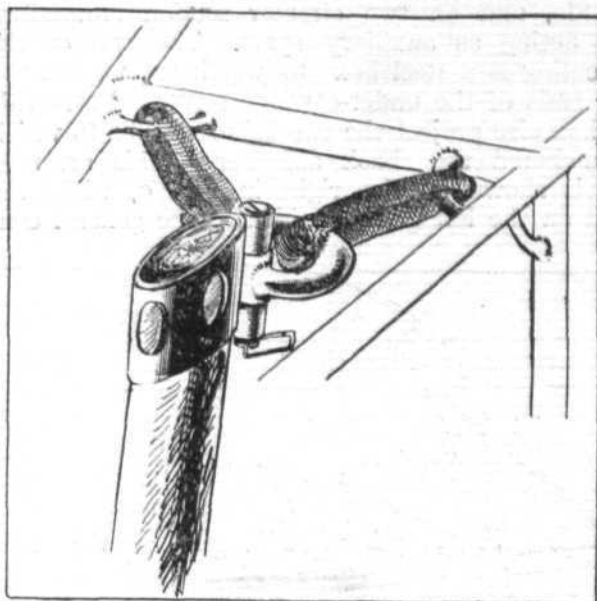
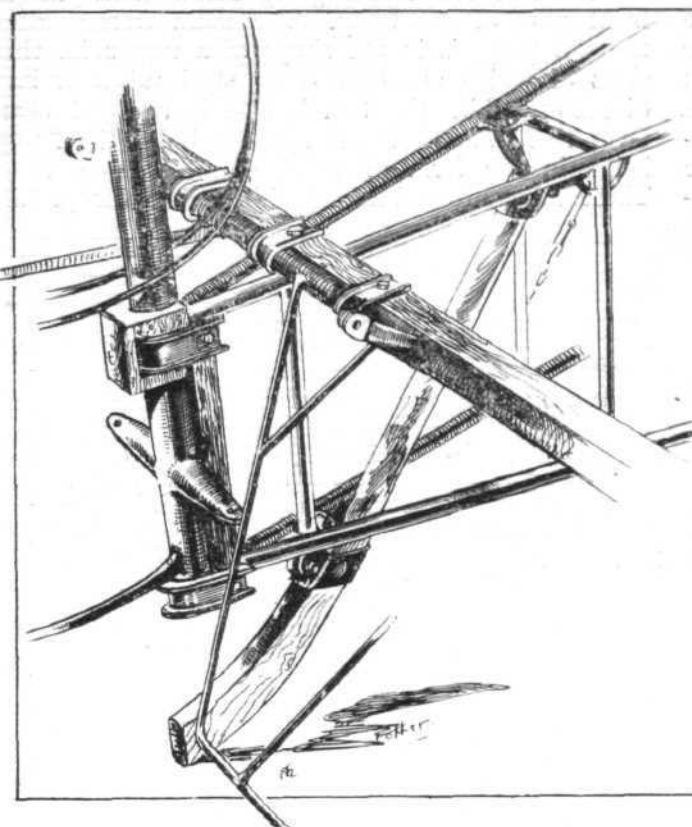


Fig. 8.—The tail skid and its attachment on the Fokker triplane. On the right, details of the shock absorbing arrangement.

that can by no means be considered negligible. In the official report on the Fokker triplane, this fairing is represented as being of symmetrical cross section. We confess that we are not quite decided as to whether or not this is correct. In the specimen shown at the Enemy Aircraft View Rooms, the fairing is very much damaged, and it is almost impossible to ascertain definitely what was the exact cross section, but from

and a cambered top. However, this is somewhat in the nature of a conjecture, and we merely express it as our personal opinion. That the extra lift obtainable by making this member a lifting surface would be worth considering appears probable, since the inefficiency due to low aspect ratio would be to some extent compensated for by the proximity of

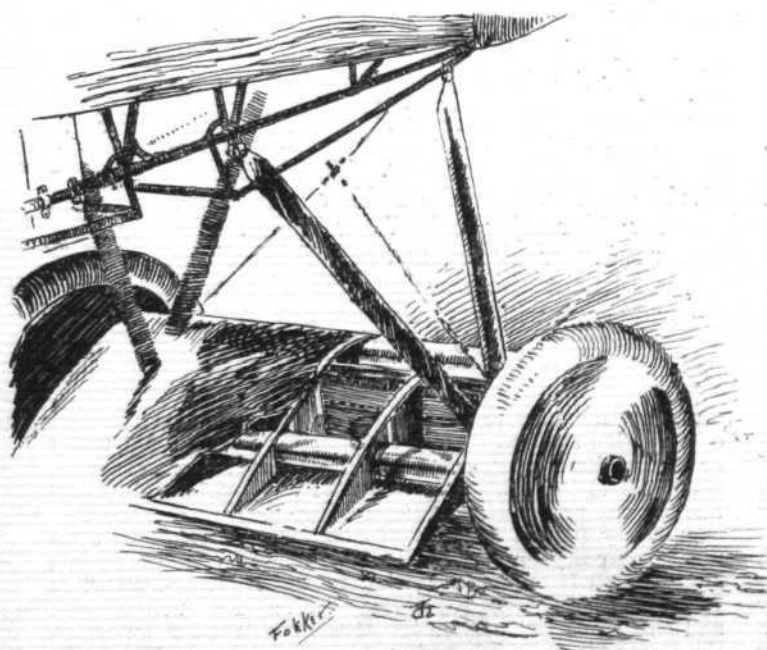
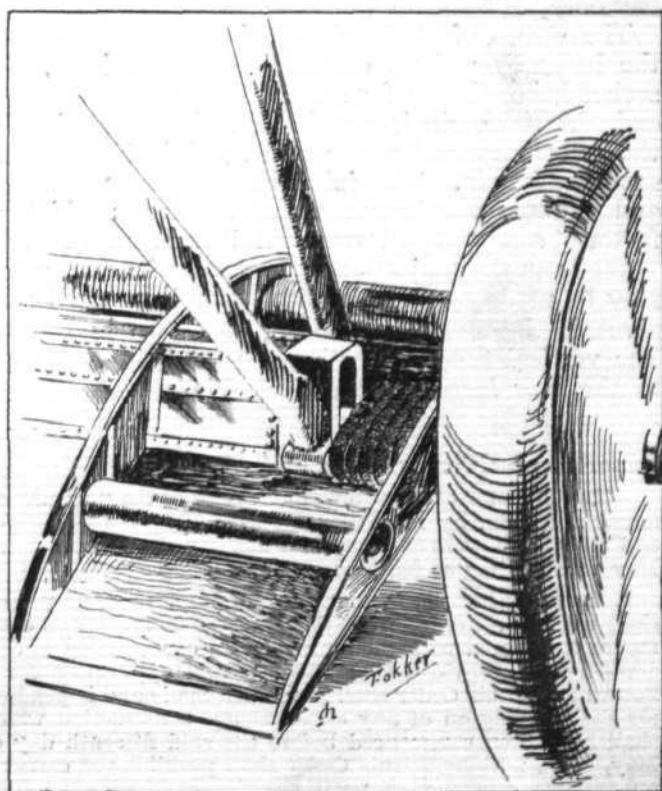


Fig. 9.—Sketch showing construction of casing around axle of Fokker triplane. On the right, details of the shock absorbers.



the flat inner sides of the wheels to the tips of the surface, which would thus act as baffle plates and tend to reduce end losses.

Constructionally, the casing around the axle consists of a covering of three-ply wood, supported on a rectangular section aluminium casing around the axle, and on two circular section aluminium tubes acting as auxiliary spars. The end of the axle casing is a steel box to which are welded the lower ends of the under-carriage struts. From this steel box also project the two tubular stubs to which are anchored the shock absorbers. This arrangement is shown on the right in Fig. 9, while the sketch on the left gives an idea of the general con-

to within a very short distance of one another. At its upper end the tube secures the rear spar of the tail plane.

Fig. 10 shows the tail plane and rudder. The former, as already pointed out, is brought down to the level of the top *longerons*, by dropping these for the last few feet slightly below those in the front part of the body. The main framework of the tail plane is in the shape of a trapezoid, three sides of which are formed by steel tubes of large diameter, while the fourth side is a wood beam. Over this framework the ribs are built, the flanges being in the form of small diameter steel tubes. These tubes are welded to thin collars surrounding

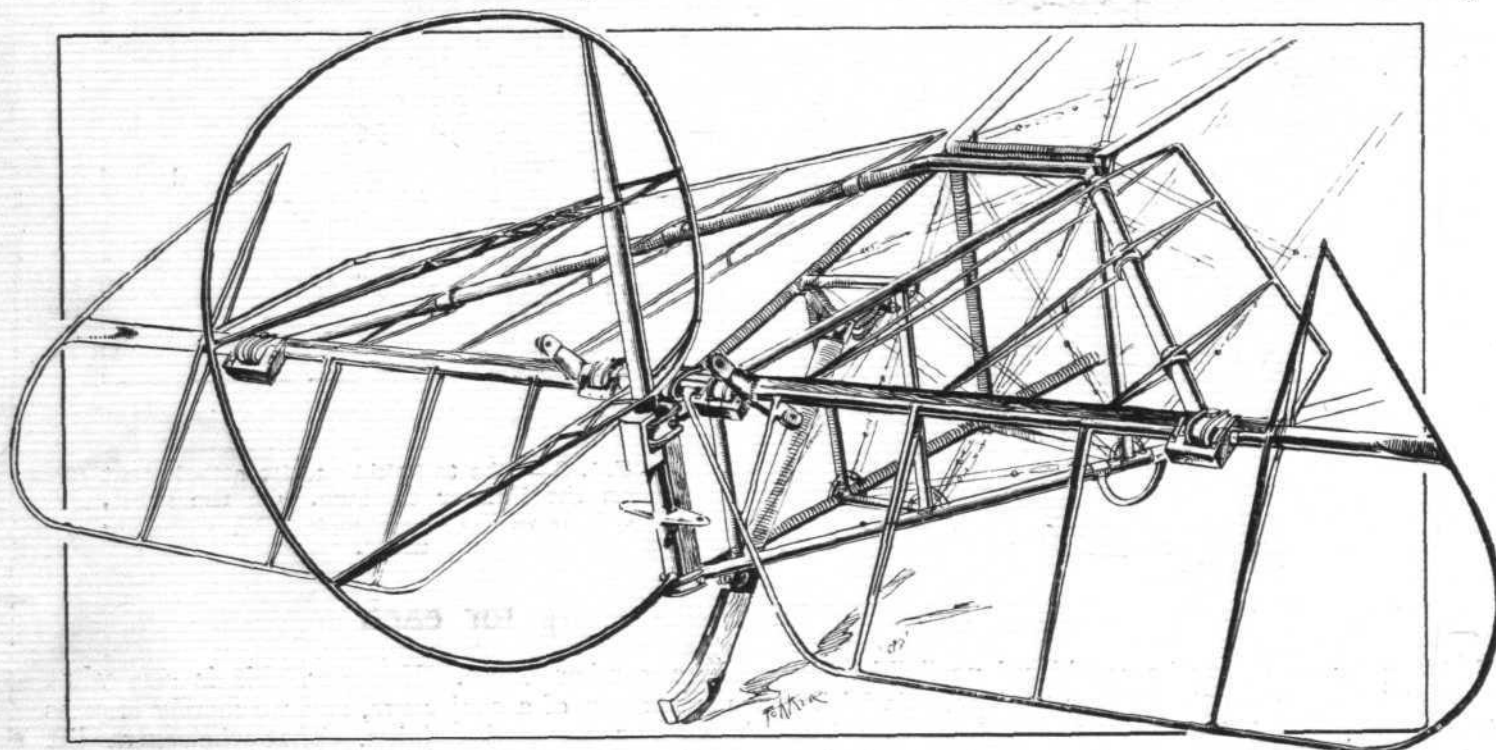


Fig. 10.—The tail planes of the Fokker triplane.

struction of the whole axle casing. The under-carriage is braced laterally by stranded cables in the front bay only.

The struts of the under-carriage are secured to the body by a form of ball and socket joint, the socket being slotted for some distance from its open end. A short pin is passed through an opening in the ball-shaped end of the strut, and is locked by a small split pin. The joint looks extremely weak, and cannot, one imagines, have nearly as high a factor of safety as the strut which it is meant to secure.

While on the subject of the under-carriage reference may be made to the tail skid. This is of wood and pivoted, the attachment being as shown in Fig. 8. The vertical tube supporting the tail skid is welded to the four *longerons* which at this point converge

the converging tubes, thus avoiding the possibility of weakening the larger tubes by heat. The construction of the elevator ribs is similar to that of the tail plane, while the rudder ribs are slightly different, being reinforced by short lengths of tube running zig-zag fashion from one flange to the other. The hinges for the elevator tube are of a very simple form, being in appearance short lengths of channel section metal bent around the tube and fastened by a single bolt to the tail plane spar. These hinges are extensively employed on the Fokker triplane, being used also for the rudder and *aileron* hinges. The elevator and rudder crank levers are welded direct to their tubes without the intermediary of a collar. Their general shape will be clear from Fig. 10.

(To be continued.)

Experimental Construction of Aero Engines.

THE Minister of Munitions in exercise of the powers conferred upon him by the Defence of the Realm Regulations and all other powers enabling him has issued an Order dated May 10th reading as follows:—

1. On and after the fifteenth day of May, 1918, no person shall without a licence from the Minister of Munitions commence or proceed with the experimental construction of any aero-engine; provided that where a first application for a licence under this Order shall have been made and is pending for the carrying on of any experimental construction which shall have been commenced before the said fifteenth day of May, 1918, nothing in this Order shall prohibit the carrying on of such construction until the licence shall have been refused.

2. For the purpose of this Order the term experimental construction shall mean any construction which is not under or for the direct purpose of fulfilling a Government contract, and shall include the preparation of any working drawings but not the preparation of general arrangement drawings.

3. Every person desirous of obtaining a licence to commence or carry on any such experimental construction as aforesaid shall apply in writing to the Director-General of Aircraft Production, Kingsway, W.C. 2, for such licence, and shall give full particulars of the construction for which the licence is required, and such further information as the Director-General may require, and shall comply with any restrictions or conditions subject to which the grant of such licence may be made.

4. This Order may be cited as the Aero-Engine (Experimental Construction) Order, 1918.

THE ROLL OF HONOUR.

THE following casualties are announced by the Air Ministry:—

Killed.

2nd Lieut. H. G. Achurch, R.A.F.
 2nd Lieut. R. Allan, Gen. List and R.A.F.
 2nd Lieut. F. C. Bailey, Gen. List and R.A.F.
 2nd Lieut. H. L. Barradell, Gen. List and R.A.F.
 2nd Lieut. N. P. Davies, R.A.F.
 2nd Lieut. E. C. W. Deacon, Yorks. L.I., attd. R.A.F.
 2nd Lieut. J. Denison, R.A.F.
 2nd Lieut. J. D. Dingwall, Gen. List and R.A.F.
 2nd Lieut. E. A. Doughty, Gen. List and R.A.F.
 2nd Lieut. G. Duerdon, Loyal N. Lanc., and R.A.F.
 2nd Lieut. G. W. Evans, R. Welsh Fus., and R.A.F.
 2nd Lieut. P. S. Gaster, Gen. List and R.A.F.
 2nd Lieut. L. Gowsell, Gen. List and R.A.F.
 2nd Lieut. E. K. Harker, R.G.A. (S.R.), attd. R.A.F.
 2nd Lieut. W. C. Hield, Gen. List and R.A.F.
 2nd Lieut. H. B. Homan, Gen. List and R.A.F.
 2nd Lieut. H. Hughes, Gen. List and R.A.F.
 2nd Lieut. C. W. James, Gen. List and R.A.F.
 Lieut. B. H. M. Jones, R.A.F.
 Capt. T. B. Jones, Gen. List and R.A.F.
 2nd Lieut. J. H. V. Latham, Gen. List and R.A.F.
 2nd Lieut. S. Leith, Gen. List and R.A.F.
 2nd Lieut. J. G. Liddell, Gen. List and R.A.F.
 Capt. J. N. Macrae, Gen. List and R.A.F.
 2nd Lieut. B. W. St. J. Mildmay, Gen. List and R.A.F.
 2nd Lieut. L. Mogridge, Liverpool Regt. (T.) and R.A.F.
 Capt. H. E. Murphy, Royal Fus., attd. R.A.F.
 2nd Lieut. A. L. Simpson, Gen. List and R.A.F.
 2nd Lieut. C. Souchotte, Gen. List and R.A.F.
 2nd Lieut. G. B. J. Stoddart, Gen. List and R.A.F.
 Flight-Lieut. E. B. Thompson, R.A.F.
 2nd Lieut. H. A. Walters, Gen. List and R.A.F.

Accidentally Killed.

2nd Lieut. E. B. Booth, R.A.F. (S.R.),
 2nd Lieut. V. R. Craigie, Gen. List and R.A.F.
 Lieut. C. E. Pattison, R.A.F.
 2nd Lieut. H. G. Tucker, Gen. List and R.A.F.

Wounded.

Lieut. A. M. Bannatyne, R.A.F.
 2nd Lieut. G. W. Bellin, Gen. List and R.A.F.
 Lieut. W. A. Brown, North'd Fus., and R.A.F.
 2nd Lieut. W. H. Bundock, Gen. List and R.A.F.
 Lieut. C. H. N. Campbell, R.A.F.
 2nd Lieut. R. E. C. Cameron, R.A.F.
 2nd Lieut. J. Collier, Gen. List and R.A.F.
 2nd Lieut. B. S. Crecine, Gen. List and R.A.F.
 2nd Lieut. J. C. Burney Cumming, Gord. Highrs. and R.A.F.
 Lieut. H. M. de Bathe, Gen. List and R.A.F.
 Capt. W. A. Forsyth, R.F.A. and R.A.F.
 Lieut. E. V. Gilliat, W. Yorks Regt. (S.R.), attd. R.A.F.
 2nd Lieut. D. W. Gordon, Gen. List and R.A.F.
 2nd Lieut. A. S. Hibbs, Gen. List and R.A.F.
 2nd Lieut. C. D. James, Gen. List and R.A.F.
 2nd Lieut. J. L. Jewkes, Gen. List and R.A.F.
 Lieut. L. Jolly, R.A.F.
 2nd Lieut. G. M. Knocker, R.G.A. and R.A.F.
 2nd Lieut. A. Leach, British W.I. Regt., attd. R.A.F.
 2nd Lieut. C. Lockett, R.A.F.
 2nd Lieut. C. A. Mason, Gen. List and R.A.F.
 Lieut. E. C. Musson, Essex Regt., attd. R.A.F.
 2nd Lieut. A. C. Nye, Gen. List and R.A.F.
 2nd Lieut. J. L. Parren, Gen. List and R.A.F.
 2nd Lieut. C. R. Pilcher, R.E., attd. R.A.F.
 2nd Lieut. D. B. Richardson, Yorks Regt. and R.A.F.
 2nd Lieut. J. F. V. Rider, Lovat's Scouts (T.F.) and R.A.F.
 2nd Lieut. J. E. Sharp, Gen. List and R.A.F.
 Lieut. A. A. P. Squires, R.A.F.
 2nd Lieut. E. E. Stock, Gen. List and R.A.F.
 2nd Lieut. J. C. Tate, Gen. List and R.A.F.
 Lieut. H. R. Uttley, Gen. List and R.A.F.
 2nd Lieut. E. R. Varley, Gen. List and R.A.F.
 2nd Lieut. B. C. M. Ward, E. Surrey Regt., attd. R.A.F.
 2nd Lieut. C. S. White, Gen. List and R.A.F.
 2nd Lieut. J. T. White, Sher. For. (T.F.) and R.A.F.
 2nd Lieut. F. S. Willsie, Gen. List and R.A.F.

Previously Missing, now reported Wounded and Prisoner.

2nd Lieut. B. McPherson, Gen. List and R.A.F.

Accidentally Injured.

2nd Lieut. J. E. Doe, Gen. List and R.A.F.
 Flight Sub-Lieut. N. Lansdowne, R.A.F.
 Flight Sub-Lieut. J. E. Philbrick, R.A.F.
 2nd Lieut. V. Topping, Gen. List and R.A.F.

Missing.

2nd Lieut. A. A. McD. Arnot, Gen. List and R.A.F.
 2nd Lieut. J. B. Coward, Gen. List and R.A.F.
 Capt. K. Crawford, Gen. List and R.A.F.
 2nd Lieut. H. Dean, Gen. List and R.A.F.
 Lieut. D. Elliott, Bord. R. and R.A.F.
 2nd Lieut. L. M. Gerson, Gen. List and R.A.F.
 2nd Lieut. T. R. V. Hill, Gen. List and R.A.F.
 2nd Lieut. T. S. Howe, Gen. List and R.A.F.
 2nd Lieut. H. Inman, Manch. R. (T.F.) and R.A.F.
 2nd Lieut. E. D. Jones, Gen. List and R.A.F.
 2nd Lieut. M. F. Korslund, Gen. List and R.A.F.
 2nd Lieut. R. G. Lawson, Gen. List and R.A.F.
 2nd Lieut. C. C. Lloyd, Gen. List and R.A.F.
 Capt. A. M. MacLean, Sco. Horse (T.F.) and R.A.F.
 2nd Lieut. I. MacNair, Gen. List and R.A.F.
 2nd Lieut. E. Mather, Gen. List and R.A.F.
 Lieut. M. T. McKelvey, R.A.F.
 2nd Lieut. G. L. Murray, Gen. List and R.A.F.
 2nd Lieut. W. Naylor, Gen. List and R.A.F.
 2nd Lieut. R. F. Newton, Gen. List and R.A.F.
 2nd Lieut. P. J. Nolan, R.F.A., and R.A.F.
 Lieut. W. D. Patrick, Gen. List and R.A.F.
 2nd Lieut. W. A. Pell, Gen. List and R.A.F.
 2nd Lieut. A. L. Pemberton, Gen. List and R.A.F.
 2nd Lieut. J. Q. F. Walker, Gen. List, attd. R.A.F.
 2nd Lieut. P. C. Westophen, Gen. List and R.A.F.
 2nd Lieut. S. H. Winkley, Gen. List and R.A.F.
 2nd Lieut. F. B. Wright, R.F.A. (T.) and R.A.F.

Previously Missing, now reported Prisoners.

2nd Lieut. A. S. Hanna, Gen. List and R.A.F.
 2nd Lieut. F. D. Shreeve, Gen. List and R.A.F.
 Lieut. A. G. Wingate-Gray, Gen. List and R.A.F.

Prisoners.

2nd Lieut. R. G. H. Adams, Gen. List and R.A.F.
 2nd Lieut. F. Beaumont, Gen. List and R.A.F.
 2nd Lieut. H. G. Dugan, Gen. List and R.A.F.
 2nd Lieut. D. G. Gold, Gen. List and R.A.F.
 2nd Lieut. F. J. Hopgood, Gen. List and R.A.F.
 2nd Lieut. F. R. Knapp, Gen. List and R.A.F.
 2nd Lieut. A. K. Lomax, Gen. List and R.A.F.
 Lieut. A. W. Miller, R.E. (T.F.) attd. R.A.F.
 2nd Lieut. M. F. Peiler, Gen. List and R.A.F.
 2nd Lieut. E. L. Smithers, Gen. List and R.A.F.

The following are reported by the Admiralty:—

Previously Missing, now reported Prisoners.

Flight Sub-Lieut. H. R. Casgrain, R.N.
 Flight Sub-Lieut. G. T. Steeres, R.N.

The following are reported by the War Office:—

Killed.

Lieut. S. Collier, M.C., Mach., attd. R.F.C.
 Lieut. V. King, R.M. (R.N.D.), attd. R.A.F.
 Lieut. L. A. Storch, Aus. F.C.
 Lieut. L. J. Sweeney, Brit. Col., attd. R.F.C.

Previously Missing, now reported Killed.

Capt. E. H. Bedson, Manch., attd. R.F.C.
 Lieut. D. G. Rouquette, R.F.C.
 2nd Lieut. R. C. Wade, R.F.C.

Wounded.

Capt. G. F. Malley, Aus. F.C.

Previously Missing, now reported Prisoners in German hands.

Lieut. A. C. Dean, Cent. Ont., attd. R.F.C.
 Lieut. C. M. Feez, Aus. F.C.
 Lieut. W. G. Fluke, D.S.O., S. Staffs. and R.F.C.
 2nd Lieut. W. G. Iramy, R.F.C.
 2nd Lieut. A. T. Isbell, R.F.C.
 2nd Lieut. E. B. Lee, R.F.C.
 2nd Lieut. R. A. Mayne, R.F.C.
 Lieut. G. A. Mercer, Can. Cy. C., attd. R.A.F.
 2nd Lieut. H. A. Payne, R.F.C.
 Lieut. H. S. Redpath, A. and S. Highrs. and R.F.C.
 2nd Lieut. G. Russell, R.F.C.
 2nd Lieut. C. V. Shakesby, E. Yorks., attd. R.F.C.
 2nd Lieut. N. H. Thackrah, R.F.C.
 2nd Lieut. D. Vaughan, R.F.C.
 Lieut. N. T. Watson, Middx., attd. R.F.C.
 2nd Lieut. T. S. Wilson, R.F.C.

Previously Missing, now reported Prisoner in Austrian hands.

Lieut. A. Jerrard, V.C., S. Staffs., and R.F.C.

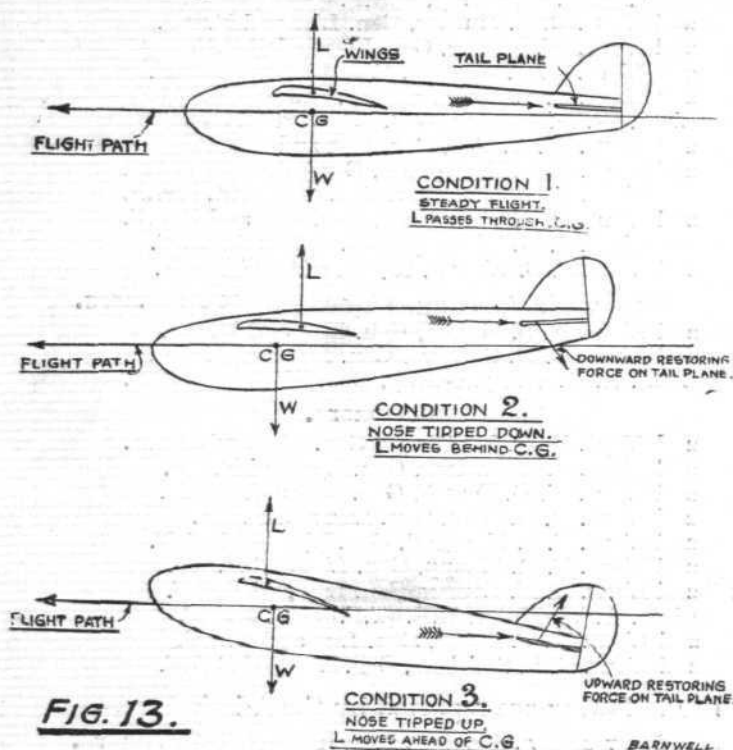
THE MODERN AEROPLANE.

By F. S. BARNWELL, Captain, R.F.C.

(Concluded from page 514.)

Now for the longitudinal stability. We saw that for practically the whole range of value of i , or angle of attack useful for flight, that is from about minus $1\frac{1}{2}^\circ$ to about $+13^\circ$, an aerofoil alone is *unstable*; because the centre of pressure moves *forwards* as i increases, *backwards* as i decreases. We attain stability by adding a tail plane behind the aerofoil and at a smaller virtual angle of attack. As to why this does so:—

Consider an aeroplane flying at say 7° value for i , with its centre of gravity so placed that it lies on the line of total reaction on the aerofoils for this particular i value (Fig. 13); also that its tail plane is set so that it is neutral in this condition, meaning that it is *edge on* to its relative motion to the air. The whole aeroplane is now balanced in this condition, assum-



ing, of course, that thrust = total drag and that (for simplicity) there is no thrust-drag couple. Now if by some momentary external force the nose of the aeroplane is tipped down, the reaction on the aerofoils moves backwards and introduces a lift-weight couple which tends to turn the nose still further down; but simultaneously a downward reaction is brought into play on the tail plane, because its leading edge is now canted *down* relative to the air flow over it, and this introduces a *restoring couple*. Precisely similarly for what happens if the nose is tipped *up*. So, roughly speaking, for any aeroplane, longitudinal stability is a question of a large enough tail plane set at what is termed a fore and aft dihedral angle to the aerofoils.

Two points are worth noting, first that the tail plane acts in the wash of the aerofoils and this wash has a downward trend compared to the flight path. So the required size and setting for the tail plane is affected by this wash. Secondly, as the movement of centre of pressure on the aerofoils is smaller at large values of i than at small, it follows that, between limits, the greater the negative setting of the tail plane compared to the aerofoils, the smaller the tail plane required for stability. This really means that to obtain longitudinal stability with a tail plane of reasonable size, it is necessary that the centre of gravity of the whole aeroplane be at the correct fore and aft position relative to the aerofoils. Probably the best position is from .33 to .38 of the chord length behind the leading edge of the mean chord of the aerofoils. By "mean chord" is meant the chord of an imaginary single aerofoil, so placed that the reaction on it would be the same as the combined reactions on the separate aerofoils of a multiplane form. If the C.G. lie outside these fore and aft limits, we shall need a larger tail plane, to prevent tendency to nose dive if the C.G. is farther ahead, or to rear or "stall" if the C.G. is farther behind.

As the tail plane, to maintain stability, must act both upwards and downwards, and is most advantageously placed when approximately equal upward and downward lift co-

efficient values are required from it, modern practice is to fit a tail plane of so-called "non-lifting" type. This is a most dangerous and misleading name, but as, unfortunately, it is current practice by now, one is fain to use it. It really means a tail plane of symmetrical fore and aft section, either flat, or of a more or less torpedo shape.

The last point to note about the tail plane is that its setting determines the normal speed of the aeroplane. If it be large enough for stability it tends to maintain the machine at one particular attitude to its flight path, which means one particular speed for level flight. If the thrust necessary to maintain this speed be increased, the result will be to make the machine climb, and thereby use up the surplus power, it will not increase the speed. If the thrust be decreased, the machine will take up a downward flight path such that the component of gravitational force along the line of thrust, makes up the total pull, necessary for this particular, or "normal gliding," speed. Of course, this is assuming that the pilot does not move the elevator flaps. These flaps being hinged at their forward edges to the rear edge of the tail plane, allow of the pilot's altering the form of the whole tail into an approximately cambered form; so he can vary the attitude of the aeroplane, and, therefore, its speed and vertical direction by their use.

The tendency on modern aeroplanes, particularly large ones, is to fit an adjusting device to the tail plane. The commonest form is one in which the rear spar may be raised or lowered by a vertical screw which the pilot can rotate by a small hand wheel at his side. It saves fatigue on long flights as the tail plane can be set for any desired speed, but it adds weight and complication.

Directional, or "weather cock," stability, is attained by the correct sizes and positions of its equivalent vertical fin surfaces. The body, the landing gear, the aerofoils (especially if they are set at a dihedral angle), the struts, &c., all have vertical fin surface values, which are difficult to estimate at all accurately, so the safest proceeding, for a novel design, is to determine what additional rear fixed fin and rudder is necessary for directional stability, by experiment on a complete model in a wind tunnel. Figures estimated by analogy from other machines are reliable if no great type variation is in question.

Finally, for lateral stability (see Fig. 12). The first point to note is that, in normal flight, there is no motion relative to the air at right angles to the fore and aft axis, the axis about which, approximately, an aeroplane rolls. So if an aeroplane flying steadily in a straight line were canted over, and no other motion took place, no force would be created tending to right it. But when it cants, the line of total lift force on it cants with it—out of line with the force of gravity. Hence the resultant of the lift and gravity forces is no longer zero, but is a sideways and downwards force. The aeroplane, therefore, begins to move sideways and downwards, and if the vertical fin surfaces are suitable, a righting couple will be formed thereby. Obviously, therefore, the main factor for attaining lateral stability is the dihedral angle of the aerofoils. This value also is most safely decided upon by model experiments, or by analogy from other machines of approximately the same type.

In modern machines lateral control is attained almost universally by double-acting ailerons, or wing-flaps. This method is more efficient at large angles of attack than warping the aerofoils, because pulling down a wing-flap is equivalent to increasing the camber of the aerofoil as well as increasing its angle of attack, whilst warping increases only the angle of attack, hence at an angle of attack near the "critical angle," pulling down a wing-flap will increase the lift whilst warping will decrease it. At small angles of attack, however, warping is quite as efficient, and a wing without flaps is slightly lighter and more efficient than one with them. The main reasons for the preference for wing flaps is that this method of lateral control is lighter work for the pilot, and permits of a completely braced and therefore safer aerofoil structure.

Considering the aeroplane now, as a whole, the points required in modern war machines are:—

- (1) Great climbing power.
- (2) Great speed especially at great heights.
- (3) Good view in every direction, any blind spot being a source of danger.
- (4) Extreme ease and quickness in manœuvring.
- (5) Greatest possible field of fire.
- (6) Slow landing speed.

These points are approximately in order of merit. To attain climb and speed, the weight must be kept as low as possible consistent with the minimum safe strength, and the drag must be kept as low as possible, by making every exposed part as small as possible and of the best possible shape. Climb calls for lighter loading than great speed, particularly near the ground. But speed at great heights calls for lighter loading than speed near the ground, so the compromise in loading to suit climb and speed at great heights is not drastic. A point to be remembered is that lighter loading means larger aerofoils and, therefore, probably a rather greater total weight of machine.

Field of view is a matter of disposition of occupants, of aerofoils, and of body shape, and is a very vexed question. Multiplanes score because of their small chord, but then there are more aerofoils to obstruct the view.

Manœuvrability calls for small moment of inertia, small stability, for large controlling surfaces, great strength and light loading.

Field of fire is much the same sort of trouble to attain as field of view, perhaps worse, for it entails fairly large exposed moving parts, impossible to fair and generally spoiling the fairing of other parts near them.

Slow landing calls for light loading, lighter than is consistent with speed; it becomes a question of what is the *maximum justifiable* landing speed.

Lastly, to consider what we may expect to be able to do with aeroplanes in the future, and to what uses they may be put, apart from war purposes, for which they are already *essential*.

Great speed with comfort, with no danger and no expensive permanent ways is the claim of the aeroplane commercially; probably greatly increased size will be economical. Speed we shall be able to get, for practically everything, in a commercial machine, especially if it be a large one, may be done to attain it. Increased size presents difficulties. If we increase the *scale* of any aeroplane throughout, the weight will go up as the *cube* of the linear dimension, the surface as the *square*, whilst the *strength* will remain the *same* for the *same stress loading value*, by "stress loading" being meant the "loading" per unit area minus the weight of the aerofoils per unit area. So the larger the machine to the same scale, the less the proportion of *useful* load it can carry, and eventually it will not be able to lift even itself.

But there are facts which make possible much larger machines than our present ones. It is easier in a large than in a small structure to distribute material economically, and thereby save weight. A large machine will not be, nor require to be, nearly so quickly *manœuvrable*; nobody will be able to loop it or fly it upside down or spin it or otherwise test its strength in every conceivable position; so its "factors of safety," and, therefore, its weight, may be made much lower; the heavy unit weights may be much more widely distributed, as quick manœuvrability is not required, thereby reducing stresses and consequently weight necessary for requisite strength. It may be multi-engined, so that risk of forced landings may be enormously reduced. Finally, it will be required, probably, to be a "one-speed" machine only, so the *best* loading and air screws for *this speed* may be employed.

I shall conclude by quoting figures I have roughed out for two aeroplanes which it would be possible for us to make

to-day (Fig. 14). First, a purely speed machine. Using an engine of about 280 h.p. we would be able to make this machine weigh only about 1,200 lbs., including petrol and oil for half-an-hour, and a 140-lb. pilot. The body would be of elliptical cross section, would be totally enclosed and provided with windows. The landing gear would consist simply of a pair of very long skids. The machine could rise with this form of gear as it would have such an enormous power per lb. weight. The landing speed would, unfortunately, be round about 100 m.p.h., for to get the highest possible speed we should have to use a monoplane form of about 40 square feet total wing area, or about 30 lbs. per square foot loading. We could probably attain a speed of about 250 m.p.h. with such

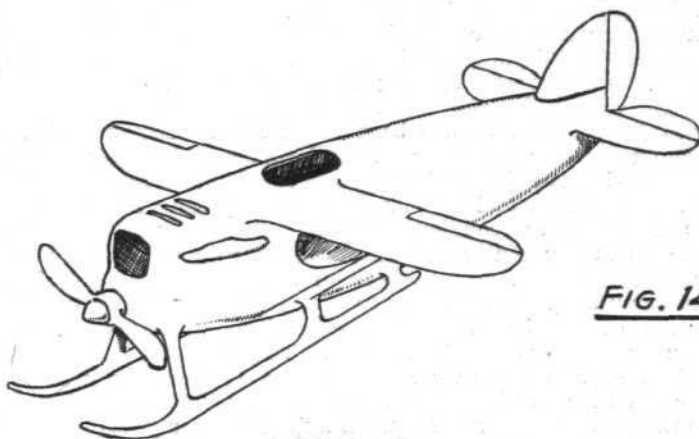


FIG. 14.

SINGLE SEATED RACING MONOPLANE.

280 H.P. ENGINE WEIGHT ABOUT 1200 LBS.

WING AREA 40 SQ. FT. WING SPAN 16 FT. L.O.A. 17 FT.

AIR SCREW 6 FT. DIA. X 11 FT. PITCH. 2800 R.P.M.

Barnwell

a machine. The air screws would need to be about 6 ft. diam. only, and about 10 ft. pitch.

I quote this machine mainly to show the danger of becoming too optimistic about enormous speeds in the near future; to attain this speed we have entirely sacrificed utility.

Secondly, a two-seated machine to fly the Atlantic. Totally enclosed biplane, again using an engine of 280 h.p.

Lightest possible machine to carry two 150-lb. men, 20 lbs. for food and drinks, mascots, &c., sufficient tankage for 360 gallons of petrol and 30 gallons of oil. The machine could be made as light as 1,400 lbs. empty, for we should only use a factor of safety of about 2, for *fully loaded* condition. 2,600 lbs. of petrol, 300 lbs. of oil, 70 lbs. of water, and the two pilots, give a total loaded weight of about 4,700 lbs. The undercarriage would again consist of a pair of long skids, but detachable axle and wheels might be fitted for getting off only, and could be fitted with a disconnecting gear by which the pilot would drop them off the skids after rising. Landing with petrol and oil nearly finished could be achieved on the skids alone at about 40 m.p.h. Such a machine could be made to do a mean speed of quite 150 m.p.h. on 18 gallons per hour mean consumption, meaning a 20-hours' flight of 3,000 miles.

Gift of an Aeroplane.

THE Secretary of the Air Ministry announces that Lieut.-Col. Sir A. E. Bingham, Bt., has presented an aeroplane to the R.A.F. Sir Albert Bingham is Senior Warden of the Cutlers' Company, Sheffield, and head of the firm of Messrs. Walker and Hall, Vice-Chairman of the Yorkshire Rifle Association, and Lieut.-Col. of the West Riding Division, R.E. (T.).

Fonck's Six in One Day.

LIEUT. LIEUT. FONCK is the first Frenchman to be credited with bringing down six German machines in one day. He left his aerodrome on the morning of May 9th with a patrol and soon encountered three two-seater machines. Two were shot down in less than 10 seconds, and the third within 2 minutes. In the afternoon while on patrol Lieut. Fonck ran into four Pfalz and five Albatroses and again succeeded in sending down three—one two-seater and two single-seaters. The six machines are said to have been brought down with an average expenditure of ten cartridges per machine.

Two Against Twenty.

AN extraordinary example of the superior moral and

fighting quality of our flying men is given in an incident which occurred on May 7th, says the *Times* correspondent at the Front. Two of the two-seater fighting machines fell in with a patrol of seven German scouts, and immediately gave battle. While the fight was on, two other enemy patrols of about equal strength hove in sight, and joined in, until there were either 20 or 21 German machines engaged against the two British. The fight went on for half an hour, in the course of which our two actually shot down eight enemies and sent down others out of control. Of the machines certainly shot down four broke into flames in the air, and four were seen to go straight to earth and crash. Our two only broke off the fight when all their ammunition was exhausted, and then, out of 20 or so Germans originally engaged, only seven were left in the air. On the following day these same two machines again fell in with a party of the enemy, of whom they shot down one and sent three more down out of control, so that the total "bag" for the two machines in two days was nine machines destroyed and apparently an equal number driven down. In another case, on May 6th, one British machine gave fight to five Germans, consisting of four triplanes and one scout, and shot down two triplanes and came home safe.

AIRISMS FROM THE FOUR WINDS

THERE has been ample evidence in the past, to which we have referred from time to time, that, whatever the feelings of recrimination may be as between the units generally of the Allies and the enemy Central Powers, there has from the first existed a courteous camaraderie between the members of our Air Forces and those of the enemy, which, with few exceptions, has kept the fighting in the air upon, literally and figuratively, a different level to the clashing of arms upon *terra firma*. Honour has been given by the British side to prominent fallen air fighters of the Germans, and in like manner has the German Flying Corps shown their respect for our pilots when they have had the misfortune to pass in their checks upon the enemy occupied territory. This is a phase of warfare which apparently is entirely beyond the wit of the Hun man-in-the-street, or of those in the higher scale of Hun intellectuality. They are only able to read into any decent action of the hated British, some beastial motive which attunes to their own vile natures. Thus we have a tirade of poisonous abuse from certain quarters of Germany in connection with the honour given by our authorities in France to the mortal remains of a clean fighter as exemplified by the late Baron Richthofen, which leave a Briton cold with contempt that such uncleanly thoughts can be evoked by Kultur from the reverend treatment by us of a respected foe. It is to the notorious Count Reventlow that has been left the task of displaying in the most virulent form this depravity of intellect. Without question the death of Richthofen has been a very bad shock to the enemy High Command, not only by reason of his clever fighting methods, but because of the very serious moral effect which the bringing down of this German champion must undoubtedly have had upon the rest of the enemy flying men. But this should hardly be justification for the following "gem" from the pen of Count Reventlow, which appears in the *Deutsche Tageszeitung* for May 1st, in connection with the funeral ceremony accorded to the late German airman:—

"These honours are nothing but the latest manifestation of British self-advertisement of 'sportsmanlike knightliness.' We used to hear much of the 'knightly' treatment of Captain von Müller, of the "Emden," but when he was free to speak we learned that instead of knightliness he had experienced nothing but ruthlessness, unrestricted contempt, and deliberate torture at the hands of his captors.

"For our part we cannot look upon the honours shown to Richthofen as sincere. The Allied Press is full of them and is beating the big drum about British magnanimity in the accustomed fashion. But they say nothing about how many and how large money prizes were offered to the one who succeeded in killing Richthofen. In truth, these must have amounted to an enormous sum. This explains why such a bitter and noble controversy raged round the corpse of the

fallen pilot, for there was cash waiting for the one, who inflicted the fatal wound and brought the German's machine down. The very flying officers who buried our hero were all fortunate moneymakers. Thus the spectacle takes on a thoroughly disgusting aspect."

"THE ONLY WAY."—An observation balloon without a passenger car, which had broken from its moorings, drifted over the West End of London last week and was brought down by shots from an aeroplane. It had just passed over Victoria Station, so the report runs, at a great height when the aeroplane appeared and, having twice circled around it, fired and flew away. Within a minute or two the balloon lost its shape and, sinking rapidly, fell clear in the roadway between Westmoreland Street and Clarendon Street, Pimlico, S.W.

Which reminds one of the old story of the balloon passenger who arrayed himself in an inflated rubber suit prior to risking an excursion in the cerulean blue, and who, when he fell out of the car, bounced so monotonously that to save him from starvation they had to shoot him on the bounce.

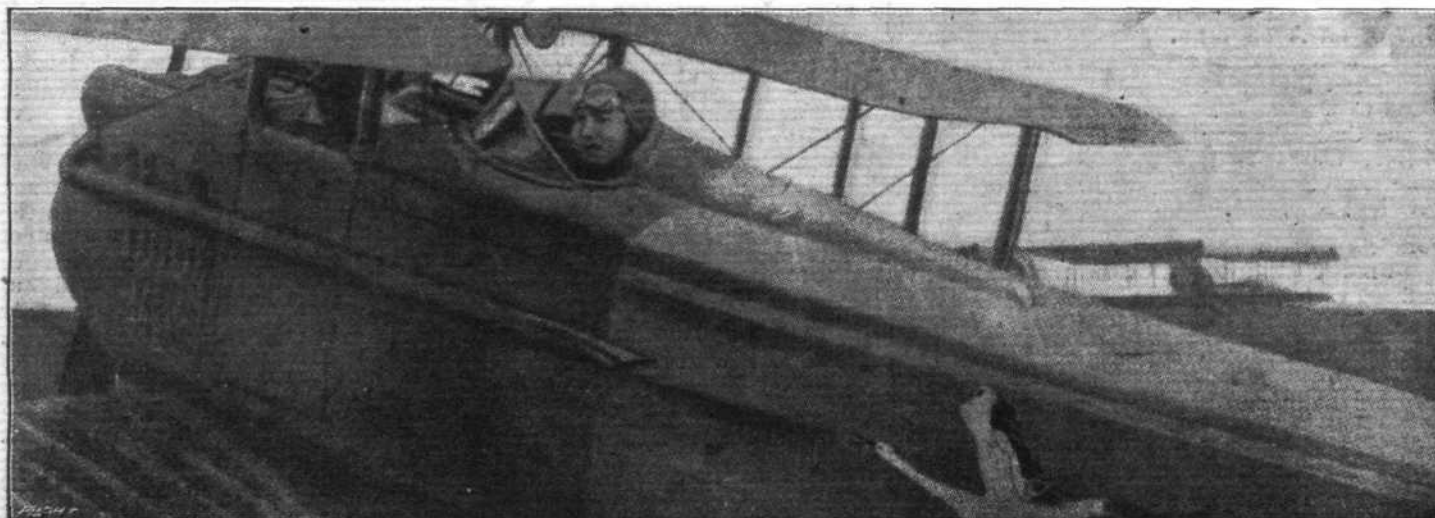
LIEUT. FONCK, the latest of the prominent French pilots to further add to his remarkable series of successes in the air against the enemy squadrons—his latest total is 42—has certainly about the most unique world's record in one direction, *if the following description is in accordance with fact*. Thus writes the special correspondent of a leading morning contemporary during a pæan of praise to this redoubtable air champion:—

"His wonderful success and skill are measured not only by the number of machines he has crashed, but by the still more extraordinary fact that his own machine has never been hit by an enemy's bullet."

THOSE who have recently during the few sultry hours which the stormy weather brought with it, experienced the cannibalistic tendencies of the persistent common or garden (literally) fly, will regard with somewhat envious feelings still another advantage enjoyed by the rider of the wind, in being able to be rid of this pest of the lower air strata. According to Lieutenant Depret-Bixio, of the French Army, who is a naturalist as well as a flying man, many insects follow captive balloons in their ascent. He has seen flies go as high as 2,970 ft., after which they die. Grasshoppers cling to the basket of the balloon until the air becomes too rarified for them, when they let go and fall. He says the swallows have a glorious time catching these insects.

It still remains for him to give the point of view of the victims.

MR. MACPHERSON, in a written answer to a question, states that 80 officer prisoners of war and 25 of other ranks are



Lieutenant Fonck, the very successful French pilot, in one of the machines which have helped him to do such execution.

interned at Margate. There is no dug-out in the garden, and they are not permitted to walk on the promenade.

The latter paragraph might well be amended to "and they are required to walk on the promenade directly air raids are notified and during their operation."

ONCE again—but unfortunately probably for the last time—a copy of *The Barb*, the Trier Prisoners of War "House journal," which again includes the two pages in French, is to hand. Its date is March 9th last, and its number, eleven. The last note upon the last page of this little publication gives the text upon which is founded our conclusion that this is likely to be the last of the series. It reads as follows:—

"Moving from Trier.

"All British officers, prisoners of war in this camp, are being moved, shortly, to other camps. These camps will probably be Holtzminde, in Hannover; and Schweidnitz, in Silesia. Thirty-eight officers out of the 66 will go to one of these camps, and the balance to the other. Friends and relatives will be notified."

To the above must be bracketed the following "L'Envoi," which precedes the formal notification of decease:—

SATURDAY, MARCH 9TH, 1918.

Ah me! Sad news (business of heaving a deep sigh). The fiat has gone forth, and we were to have gone about the fifth. Our days here are numbered, in any event.

And so we are driven to pen this valedictory. Our race is run. The bones of *The Barb* are about to be added to the debris in annihilation's dumping ground. An expediency that we wot not of, the cause—suspension of publication, the effect.

And so, this little syncopated requiem. Tosti wrote his rather morbid "Good Bye" to nobody in particular, and got away with it. Beethoven committed his "Farewell to the Pianoforte" when he was so aged and infirm that he could hardly tell a crochet from a semi-quaver. Why, therefore, should we not bid an appropriate farewell to the readers of this little rag-time journalette? Have they not supported us, with conspicuous generosity, in sickness and in health, throughout the period consumed in producing the eleven issues of our brief, and somewhat desultory, life?

"They have indeed," say we, swallowing lump in throat.

We beg to thank them ALL. This is the first paper we have ever had anything to do with that has no delinquent subscribers; hence the "upper-case" emphasis.

Somewhere, from afar off, the man who put the "fang" in "Gefangener" has sent out the move-on signal, and so we float on; flotsam and jetsam on the tide of mischance. Indeed we may be considered the present "floating population" of Germany, flung hither and thither upon the equinoctial gales of these troubled times, waiting until a tranquil tide casts us gently upon our native strand.

We have endeavoured to show, in these pages, that we are all keeping a stiff upper lip. Are we down-hearted? No; jamais!!

And this is the message we would send forth. All our hearts are full of confidence and hope. Of the stupendous national issues which are being slowly sorted out by the indolent hand of the great god Mars, we are naturally largely in ignorance. Yet we would like to pass along an all-embracing vote of confidence, in the men and matters of moment, in our tight little isle.

Here, presumably, endeth *The Barb*. If, perchance, there is no camp organ in our next stopping place, it is within the bounds of possibility that we shall resuscitate this little two-by-four sheet; always provided that people will permit us to inflict it upon them anew.

Cheerio!!

It is a pity the latitude accorded by the enemy censor as to publication precludes further elaboration of the moving than the above. But the tone of optimism is still evident throughout, in spite of all the difficulties of the situation. In a further article, which we hope to find room for next week, is seen the method of "recreative walks" which the prisoners are permitted. In this again emerges that unconquerable fund of good spirits which enables this country to carry on, no matter what the adverse circumstances.

"Per ardua ad astra" is all very well as a motto for the Happy Warrior who flies the machine. But how about a motto for the man who never gets to the stars, but plumbs the depths for new profanity adequate to the occasion and sweats blood for hours before the pilot appears on the scene to take over? How about the A.M.?

PERHAPS he will find what he wants in Rudyard Kipling's little shilling's worth of mixed verse (much of which we do not appear to have seen before).

As for instance: "The Sons of Martha":—

The Sons of Mary seldom bother, for they have inherited that good part,
But the Sons of Martha favour their Mother of the careful soul and the troubled heart;

It is their care, in all the ages, to take the buffet and cushion the shock.

It is their care that the gear engages—it is their care that the switches lock.

And because of their labours—

—Then is the bed of the deep laid bare,
That the Sons of Mary may overcome it, pleasantly sleeping, and unaware.

Let any tired rigger who has worked with numbed fingers at five o'clock of a cold, dank morning hear his Singer:—

They do not teach that their God will rouse them a little before the nuts work loose;

They do not preach that His Pity allows them to leave their work when they damn-well choose.

As in the thronged and the lighted ways, so in the dark and the desert they stand,

Wary and watchful all their days, that their brethren's days may be long in the land.

THE little book pipes to every mood, if you will but take it out of the pocket it fits so handily. There is an exquisite little lyric—"The Dawn Wind," perhaps the best thing of the kind he has given us since the perfect "Path through the Woods." "The Holy War" contains some divine invective, "brittle intellectuals

Who crack beneath a strain"

the "swithering neutrals"; and when you consider that here are "The Thousandth Man" and "If" in handy form, it should be worth an ounce less of tobacco to have it all.

THE country of tulips, gin and lotteries is in a bad way just at present. Better be an inhabitant of Herculeum than a neighbour of Germany. Yet the Dutch have a respectable little army, and we remember the reply given to the blustering Frederick who made large, vague threats about his "six foot Pomeranians." "My dykes are ten feet deep," was the answer. But the Hun seems to find it difficult to take his opponents seriously. Perhaps his "kultur" is revolted by a folk who render the German Shakespeare's so-beautiful lines as "Ook gij, Brutus?" It suggests inebriety more than tender reproach!

Nor least among the "aces" that France mourns to-day stands René Dorme, "le Père Dorme," as they used to call him, because of his air of paternal benevolence. The tranquil little middle-aged man, whose one conceit was his prowess at billiards, did not suggest the gladiator who had "downed" more than fifty Boches. He had several miraculous escapes, and at one time managed to extricate himself from a collision in mid-air, when his twin-motored Caudron limped back to the aerodrome with the wires of one wing sagging a foot, and an aileron half off. Because of his immunity from lead (in his first 20 flights he only received two hits) he was called "The Unpuncturable." You get an idea of the man from the letter he wrote to a journalist friend with a picturesque style who was asking for detail on his career:—

"I can't give you many details, you know me well enough. They call me 'Father Dorme' because I always move as placidly as a fat farmer. I hope I have a sense of humour, and I adore broiled chicken. As to the Legion of Honour which you speak of, like Sister Anne, I am still waiting.

"Yesterday was very fine. I got in seven hours' flying, and put one Boche to sleep.

"Above all, remember my recommendation, silence as to me, or at least sobriety!"

Three days before he should have received his coveted red ribbon, he was killed.

TEN YEARS AGO.

Excerpts from the "Auto." ("FLIGHT's" precursor and sister journal) of May, 1908. "FLIGHT" was founded at the latter end of 1908.

THE WRIGHTS AND THEIR FLIGHTS.

Now that the Brothers Wright have definitely decided to compete for the U.S.A. Government contract, it is only to be expected that rumours of trial flights will once more be wafted across the "herring pond." Already we have a report and a contradiction, that they have and have not, respectively, flown a distance of two miles under official supervision at Nag's head, in North Carolina.

TRADE PARLIAMENTS AND THEIR WORK.

By ERNEST J. P. BENN, Chairman Industrial Reconstruction Council.

IV.—DEMOMOBILISATION AND APPRENTICESHIP.

JOINT Standing Industrial Councils could be busily employed if they existed to-day and did nothing else but study the problems connected with demobilisation, apprenticeship, and kindred matters, and prepared reports and plans, for the guidance of the Government when the need arises. There are to-day eight million workers, or half of our total population, employed directly on the war, either as soldiers or munition workers. To these must be added some millions of civilian workers whose present occupation is dependent on the war. We may, therefore, assume that when the war comes to an end not less than ten million persons will find themselves, if not actually out of work, at least under notice. It is generally assumed that the Government will keep on its employees—soldiers and others—in their present position and only let them out upon the market at the rate at which the market is prepared to absorb them. This is, no doubt, a very necessary arrangement, but, from the national point of view, an extremely expensive one, and anything which can be done to facilitate the rapid transfer from war of this large proportion of the population must certainly not be neglected. The demobilisation of the Army would be better described as the remobilisation of industry, and it is obviously a much more difficult job for industry than for the War Office. It must be remembered that these ten million people have been absorbed into the war by degrees. Lord Kitchener's first demand was for 500,000 men, and that was thought to be rather a large order at the time that it was first given. We have taken four years to divert this huge army from its normal work to war work. The reverse process will have to be done at a much more rapid rate. We shall be in direct competition with every nation of the world in this matter. Whoever wins the war, the nation which can restart its industries most rapidly will win the world's markets.

So long as the debate on demobilisation is confined to such general principles as those stated above the matter seems easy; it is when we get down to details that the difficulties become more apparent. Every trade has its necessary proportion of skilled and unskilled workers; every factory depends upon the proper arrangement of different classes of workers. There are very few trades that can be kept going unless all departments are run on about the same pace. The War Office knows nothing of these matters, and unless it is informed by the trades themselves of the classes of labour which should be demobilised first utter chaos must ensue. There will be gangs of machine hands without a fitter, fitters without hands, labourers without foremen, and foremen without labourers. The elaborate process of combing out, under which the less essential workers have been taken first, has been performed very gradually and with much painstaking on the part of tribunals and others. The reverse process will have to be performed at a much more rapid rate, and cannot be successfully accomplished without the most elaborate and detailed and expert plans carefully

prepared beforehand. The same sort of question will arise as to the preference to be given to particular trades. For example, it is no use supplying the fancy leather trades with labour until tanners and curriers are first put to work.

There is another big class of problem which comes under the term apprenticeship, which can only be settled by each trade, and which will demand the early attention of Whitley Councils. Under this heading we class all those problems which arise from the fact that our boys of eighteen will have lost four or five years of the most valuable period of their lives. The problem starts with the medical student and finishes with the boy in the factory. All through the professions and the trades we find innumerable customs under which the youth begins as a learner, then becomes an improver, and then a second, and, finally, a first hand. Between eighteen and twenty-three or four in every walk of life a youth is really learning his business. The war has cut this period clean out of the lives of hundreds of thousands of young men, and the most careful arrangements will have to be made to provide for the problems that have thus arisen. The article clerk who was willing, as a boy of eighteen, to live at home and take thirty or forty pounds a year as pocket money has suddenly become a young man who ought to know his business, and ought to be earning a proper wage. Now if this problem is left to individual bargaining between man and employer the consequences will be very serious, and it is obviously necessary for each profession and each trade to lay down principles which shall guide all the individuals concerned.

There is still another side to this great subject—the question of the disabled and the unfit. After every previous war in history the streets have been crowded with beggars recruited from this class. No nation has a clean record so far in this respect, but if the British nation is determined to do anything it is certainly determined that those of its sons who have been disabled in the present war should be properly treated when the war comes to an end. It is agreed that this is not a matter for charity. Our heroes are not to be submitted to the indignity of accepting alms. It becomes, therefore, the duty of each profession and each trade to provide for its own disabled. It is surely absurd that the skilled cabinet maker should have to start his life over again and learn some totally different trade. It is obvious that, even though his abilities may be seriously impaired, his past experience of his own trade must be capable of being turned to some account.

There can be no arguing as to the need of Joint Standing Industrial Councils to consider all these problems, and in this branch of work we are free from the discussion as to whether Labour has a right to participate. All these things can certainly be arranged far better by a Council composed of equal parts of employers and employed than by any sectional organisation.

Under the Niagara Bridge.

LIEUT. HERBERT LAURIE, instructor at the Beamsville training camp, Canada, has repeated the feat of the late Lincoln Beachey by successfully flying under the steel arch bridge at Niagara gorge.

Kite Balloons and the Navy.

It was not until the early months of 1915 that the Kite Balloon Division of the R.N.A.S. came into being. When the demand for observation balloons for the Dardanelles operations came through in March of that year, the Royal Navy was able to send out a completely equipped Kite Balloon Section in a specially fitted steamer. The vessel, the *Manica*, a converted tramp, which arrived just a month after the demand was made, immediately proved the value of the unit. Within three days a Turkish camp was shelled under the direction of the kite balloon, and the occupants thrown into confusion; while in the following week the "Spotter" directed fire on the Gaba Tepe position, which resulted in the destruction of the barracks.

The triumph, however, came before April was out, for from their aerial perch, the observers spotted, lying quietly in the water on the other side by the Peninsula out of sight of our warships, a large Turkish transport. The transport apparently considered herself quite safe—but in warfare the unexpected often happens. H.M.S. *Queen Elizabeth* was operating near the balloon ship, and the bearings of the Turkish vessel were given her. The first shot fell short. By this time the other ships near by were beginning to take an interest in what was

happening to Elizabeth's invisible target, which was lying nine miles the other side of the Peninsula. A second shot went nearer the mark. Again the direction was corrected, and a third heavy projectile screamed overland. By the telephone wire of the kite balloon came the words, "Got her. She's sinking by the head." The signalman semaphored this literally to *Queen Elizabeth*, and a roar of laughter went up as the various ships read the laconic message.

Repeated attacks were made by the Turks on the solitary kite balloon and her parent ship, but they were fought back. The effect on the Turkish shipping was evident, for whenever the *Manica's* offspring ascended, the enemy craft, remembering the fate of the transport, hustled off out of range of our big guns. The official record of the *Manica* for the next fortnight was as follows:—

April 28th.—To field batteries; several guns destroyed.

April 30th.—Chanak shelled; burned for two hours.

May 2nd.—Battery of 8 in. guns shelled; three direct hits.

May 8th.—Four batteries silenced.

May 12th.—House, reported to be Turkish Headquarters destroyed.

This and other work was a wonderful tribute to the efficacy of the new observation contrivance, and it should be remembered that barely two months before there was not a single kite balloon in England, and that the whole of the section was in an embryonic state. The experience gained in the *Manica* was the foundation of what is now an active branch of the Royal Navy.

SEAPLANE v. ZEPPELIN.

THE following further details are available regarding the fight between a seaplane and a Zeppelin mentioned in the Admiralty *communiqué* of May 13th, which will be found on page 549:—

"The seaplane, under the command of Captain Pattison, was patrolling the North Sea on the afternoon of May 10th, when the Zeppelin was sighted. Visibility was not good at the time. The seaplane at once attacked the Zeppelin, which immediately sought to get the advantage of height. She threw out bombs indiscriminately and discharged a quantity of water ballast in order to rise more quickly. The enemy also threw out a smoke screen and endeavoured to escape under its protection. The seaplane, however, kept her well in view and opened fire.

"As a result of the lightening of the Zeppelin she rose

a further 2,000 ft., but as she ascended she was closely followed by the seaplane, which fired many rounds into her. The Zeppelin, continuing to rise, reached a great height, and appeared to be in such difficulty that it was found necessary to throw overboard material.

"After persisting in the attack for 35 minutes, the seaplane forced the Zeppelin to retreat at full speed for the German coast. Just at this time six enemy destroyers arrived on the scene, and fired a few rounds at the seaplane, but soon afterwards turned westward. Five minutes afterwards the oil pipe of the seaplane fractured. Attempts to repair it in the air failed, so the seaplane came down on the water, and the pipe was mended with tape. The seaplane then continued her patrol, and eventually returned to her base, with no further damage and no casualties."

Promotion of Admiral Kerr.

It was announced in the *London Gazette* of May 10th that Vice-Admiral C. L. Napier having been placed on the retired list at his own request, Rear-Admiral Mark E. F. Kerr, C.B., M.V.O., has been promoted Vice-Admiral, dated April 26th, 1918. Admiral Kerr is a Major-General in the Royal Air Force, and is Deputy Chief of the Air Staff.

General Trenchard's New Post.

MR. BONAR LAW announced in the House of Commons on Monday that General Trenchard had been offered and had accepted the command of a very important part of the British Air Force in France.

Permits for Buying Machinery.

THE Ministry of Munitions states that power-driven machine tools or woodworking machines and treadle lathes for woodworking or metal (3-in. centres and over) come under Regulation 30A of the Defence of the Realm Regulations, and intending purchasers must make applications for permission to purchase the machines they require to the Executive Officer of the Area Clearing House Board in their district.

Firms (including auctioneers) must obtain permission to sell machines from the Controller of Machine Tools, Charing-cross Buildings, Embankment, W.C. 2.

The Freedom of the Air.

LECTURING ON "Economic Problems of Peace after the War" at University College on May 7th, Professor W. R. Scott said that one of the first problems to be decided after the declaration of peace would be the freedom of the air. Already there were indications that postal services might be transferred from the railways to the air, and no doubt aerial passenger traffic would soon be an established fact. There might be

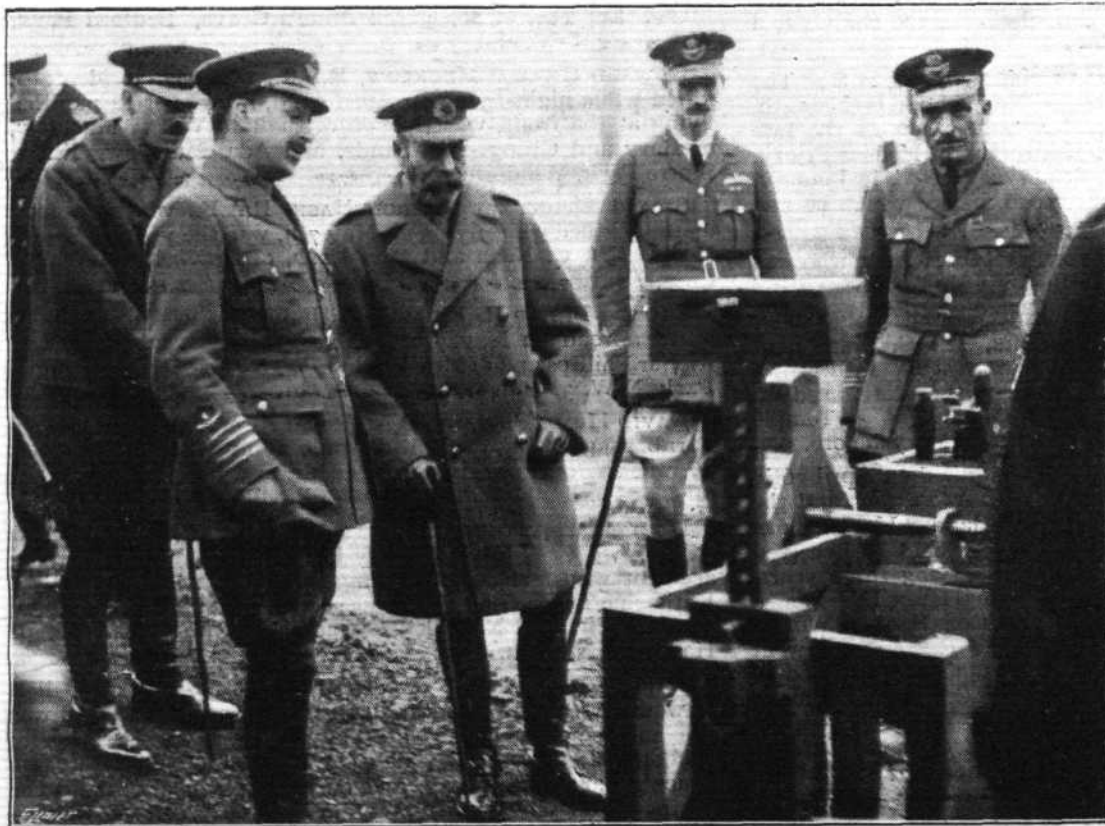
a reluctance on the part of many nations to permit unrestricted use of the air to foreign nations. A solution of this problem, he suggested, might be found in the establishment of a freedom of the air on the same basis as the freedom of the seas before the war, under the control of an International Aerial Board.

New U.S. Identification Mark.

IN place of the star and circles first adopted as the national marking on U.S. aeroplanes, it has now been decided to use a rosette consisting of red, blue and white circles, the white being in the centre. The diameter of the white circle will be one-third, and that of the blue two-thirds of the diameter (5 ft.) of the outer red circle. Both sides of that portion of the rudder which is in the rear of the rudder post will be painted with three equally wide bands parallel to the vertical axis of the aeroplane and coloured red, white and blue, the red band nearest the rudder post and the white in the centre. The number of the machine will be placed at the top of the white strip.

Croix de Guerre for U.S. Flyer.

2ND LIEUT. ALONZO M. SEYMOUR, whose home is at Peekskill, New York, was the first American to receive individually the French Army Corps citation with the Croix de Guerre on May 6th, says the *Times* correspondent with the American Army. He is a probationary aeroplane observer. The citation states that he distinguished himself immediately after the arrival of his unit by his daring and quick perception, directing on April 12th a successful service for the Army, despite bad atmospheric conditions and constant attack by enemy anti-aircraft guns, and ably conducting from beginning to end our demolition of a troublesome enemy battery.



British Official.
The King's visit to the new R.A.F. Armament School—Viewing some of the apparatus used in training fighters. From left to right: Lord Cromer; Col. A. C. H. MacLean, the Commandant; H.M. the King; Brig.-Gen. Hearson, R.A.F. Director of Training; Major Smith, Chief Instructor of Gunnery.

Personals.

Casualties.

2nd Lieut. BENEDICT GODFREY ALLEN BELL, R.A.F., fourth son of Canon J. Allen Bell, vicar of Wimbledon, was killed on April 7th. Born in 1891, he was educated at Bowden House School and at Shrewsbury. In 1912 he went out to Singapore. After having made several unsuccessful applications for leave, he resigned his appointment, and reached home in March, 1917. He joined the R.F.C. immediately, and went out to the front last January.

Lieutenant HAROLD JOHNSTON BROWNE, R.A.F., who was killed in action on May 3rd, in his 19th year, was the elder son of Mr. Harold Browne, of 3, Fairfax Road, Hampstead, and 163, Queen Victoria Street, E.C. He was educated at the Royal Naval College, Osborne, and Clifton College, and entered the R.F.C. as a cadet on July 25th, 1917, being appointed second lieutenant on November 17th, 1917.

Lieutenant BERT EDDLESTON, R.A.F., who was accidentally killed on April 25th, was the son of Mr. and Mrs. Thos. Eddleston, St. Hubert's Road, Great Harwood, Mr. Eddleston being a respected member of the clerical staff of Messrs. Waring and Gillow, Ltd. Deceased, who was 19 years of age, was educated at the Accrington Secondary School, where he won a County Council scholarship for four years, and intended to enter the teaching profession. After passing his Oxford Exam. at 18, he enlisted in the Cheshire Training Res. Battalion, from which he was transferred to the R.F.C., and in February of this year was successful in gaining his wings, being pronounced a "born flyer." He was sent to France on April 13th, and on the 25th he was killed whilst practising diving and shooting at a ground target. Through some defect in the material of the machine, his wings gave and folded back during a dive, and he was instantly killed.

Lieutenant HORACE WILFRED GIRDLESTONE, R.A.F., who was killed in action on April 30th, was the son of the late Henry Girdlestone, Cape Town.

Second Lieutenant W. G. HARGRAVE, R.A.F., who was killed in Italy, on April 25th-26th, was the second son of the late C. S. Major Hargrave, R.E. Born in 1891 he was serving in his father's corps in South Africa on the outbreak of war, and had completed about 12 years' service. He served in German South-West and subsequently in German East Africa, contracting malaria and blackwater fever in the latter campaign. Proceeding to Cape Town when convalescent, he was sent home to take up a commission in the R.F.C., and was gazetted last August.

Lieutenant ARTHUR MONTAGU HEPWORTH, M.C., The Queen's, attached R.A.F., who was killed in action on May 4th, was thirty-one years of age and youngest son of the late Montagu Hepworth and of Mrs. Hepworth, of Hedsor Priory, Bourne End. He had his commission in the Queen's in January, 1915, and was promoted in June, 1916, before which he had been appointed acting captain.

Captain CHARLES ROGER LUPTON, D.S.C., R.A.F., who was killed on May 9th, aged 19, was the only son of Charles and Katharine Lupton, of Carr Head, Roundhay, Leeds.

Lieutenant CLIVE GOULDING MOORE, R.F.C. and 22nd Royal Fusiliers, who was missing since August 15th, 1917, and is now reported killed while flying on that date, aged 21, was the eldest son of Robert Ernest Moore, of 3, Temple Gardens, and 42, Acacia Road, and Hilda Mary Moore.

Major A. G. PARSONS, R.F.A., who was killed on April 26th, was the only son of the Hon. Sir Charles A. Parsons and the Hon. Lady Parsons, of Ray, Northumberland. He was born in 1886, and educated at Eton and Woolwich. He received his first commission in 1906, and after serving three years, retired to enter the engineering profession. He was a director of Messrs. C. A. Parsons and Co., Heaton Works. At the outbreak of war, he rejoined the R.F.A., and went to the front in November, 1914. In 1916 he was attached to the experimental department of the R.F.C., where he made several useful mechanical improvements. In November, 1917, Major Parsons was severely wounded in the fighting near Cambrai. He returned to the command of his battery early last March.

Lieutenant ALAN C. R. TATE, R.A.F., who was killed on

May 2nd, whilst on an offensive patrol, aged 22, was the elder son of Colonel Alan E. Tate, C.M.G., A.D.M.S., Quetta. He was educated at Charterhouse and Stonyhurst. He was debarred by the results of an accident which permanently lamed him from serving in the Army at the outbreak of the war, but for a year he was an orderly under the Croix Rouge in France. In June, 1917, he entered the R.F.C. as a cadet, graduating as pilot early in the present year. In March he joined a squadron at the front. His younger brother, Sub-Lieut. H. R. Tate, R.N., is at present serving with the Grand Fleet.

Second Lieutenant ALEC GILMOUR BOARDMAN, R.F.C., who was killed in an aeroplane accident on Salisbury Plain on April 29th, was the son of Mr. and Mrs. John A. Boardman, Hadley, Woodford Green. His age was 18 years.

Captain BERT JAMES, R.A.F., who was accidentally killed while flying on May 7th, aged 22, was the son of Mrs. J. C. James, of Semaphore, South Australia.

First Lieutenant NORMAN CHARLES KEARNEY, of the R.A.F., who was killed at Andover, Hants., on April 27th, was 26 years of age and was the son of the Rev. N. C. Kearney, M.A., of Geelong, Australia, and Wimbledon, and the younger brother of Mr. E. C. Kearney, the inventor of the "Kearney" High Speed Mono Rail System. He was married in December, 1915, to Frances, the youngest daughter of Mr. and Mrs. W. Howes, of Mill Hill Road, Norwich. Mr. N. C. Kearney enlisted in the East Surrey Regiment in Feb., 1916. He was in the first Battle of the Somme, and was wounded at Guillemont, on September 3rd, 1916. Later he received a commission in the R.F.C., in which he was regarded as a first-class pilot, and had recently been recommended for the post of Pilot-Instructor. He leaves a widow and one child.

Lieutenant VICTOR WILLIAM VALETTE LOWRIE, R.A.F., who died as the result of an aeroplane accident on April 27th, aged 18, was the only son of Mr. and Mrs. Alfred Lowrie, of Lynwood, Radyr, Glamorgan. He was educated at the Llandaff Cathedral School and afterwards at Clifton College, where he held the School Racquets Championship. Last August he joined the air service, obtained his wings in record time, and became an instructor.

Lieutenant L. F. DEREK LUTYENS, R.A.F., who was killed on May 8th while flying, aged 23, was the son of Mr. and Mrs. Lionel Lutyens, of 26, Queen Anne's Grove, Bedford Park, W.

EDWARD GERALD MUCKLOW, R.F.C., who was accidentally killed while night-flying on April 22nd, after over 14 months' flying at the front, was the son of the late Walter Mucklow, of Bury and Grange-over-Sands, and Ada Mucklow, Elton, Storrs Park, Windermere.

Second Lieutenant GORDON NASH, R.A.F., who was accidentally killed while flying on May 7th, was the younger son of the late W. G. Nash and Mrs. Nash, of Crayfield, St. Paul's Cray, Kent.

Captain PHILIP R. PHILLIPS, R.F.A., who was accidentally killed abroad on May 7th, was the younger son of the late Arthur Phillips and of Mrs. Phillips, 70, Avenue Road, Regent's Park, N.W. 3.

DAVID HUME PINSENT, B.A., Royal Aircraft Establishment, Farnborough, who was killed while flying on May 8th, aged 26, was the only surviving son of Mr. and Mrs. Hume C. Pinsent, of Foxcombe Hill, near Oxford, and Birmingham.

Lieutenant ARTHUR BURRELL THORNE, R.F.A., attached R.A.F., who was killed on May 8th as the result of a flying accident whilst engaged training pupils, was the husband of Katharine Thorne (née Thursby), second son of Major Frederick Gordon Thorne, Norfolk Regiment, and Mrs. Thorne, of Heacham, Norfolk. His age was 23 years.

Major ERIC JAMES TYSON, D.S.O., M.C., R.F.C., who died of wounds received on March 11th, was born in 1892, and was the only son of Mr. Joseph Tyson, Bursar of Westminster School. He leaves a widow and a baby son. He was educated at Westminster, and on leaving school entered the motor business. Immediately at the outbreak of war he enlisted in the A.S.C. (M.T.), and was all through the retreat

from Mons. Later he transferred to the R.F.C., where his promotion was rapid. He was awarded the M.C. and mentioned in despatches, and subsequently acted as flying officer and instructor on home service. In 1917 he was awarded the D.S.O. for repeated meritorious service and conspicuous gallantry in the air.

WALTER GILBERT WHALLEY, 4 R.A.F., late Canadian Infantry, who was killed whilst flying at Duxford on April 27th, aged 32, was the youngest son of the late C. G. C. Whalley, and of Mrs. Rothwell Garnett, of South Vancouver, B.C., and husband of Eleanor A. Whalley, of Oxford.

Second Lieutenant HAROLD BARKLEY WINTON, R.A.F., who was killed in an aeroplane accident on April 21st, aged 24, was the only son of William and Edith Winton, of Beddington, Surrey. He was educated at Gore Court, Sittingbourne, and, gaining the first Old Salopians Scholarship, entered Mr. Chance's House at Shrewsbury in 1908. While there he was captain of "Fives," and represented the school at football. In 1912 he went up to Cambridge as a Benson Classical Exhibitioner of Magdalene College, with a Dr. Taylor's exhibition from the school. He took his B.A. degree by proxy in 1915. In September, 1914, he enlisted as a private in the 16th Middlesex Regiment (Public Schools), and went to France in November, 1915, where he was wounded on June 28th of the following year. On August 13th, 1917, he was transferred to the R.F.C., and, obtaining his wings in February, he went to the front as a pilot on April 6th, 1918.

Lieutenant BRYAN FRANK LAWSON YEOMAN, London Regiment and R.A.F., who was accidentally killed whilst flying on May 11th, in his 22nd year, was the second son of Capt. E. W. Yeoman and Mrs. Yeoman, of "Lauriston," Burnt Ash Road, Lee.

Married.

The marriage arranged between Captain J. C. M. HAY, R.A.F., and Miss M. MONICA LIDDELL took place on Thursday, May 16th, at St. Mary's, Cadogan Gardens.

Major LEONARD WRIGHT LEARMOUNT, D.S.O., M.C., R.A.F., only son of R.K. Learmount, of Gosforth, was married to ADA ELIZABETH BALL, elder daughter of A. Ball, 86, Rosebery Road, Muswell Hill, N., on May 7th, at St. James' Church, Muswell Hill.

FRANK LAWRENCE SWAIN, R.A.F., younger son of Frank Swain, of Sidcup, Kent, was married to DOROTHEA OLIVE,

only daughter of J. F. McNALLY, of St. Peter Port, Guernsey, on April 27th, at St. Mary's, Bury St. Edmunds.

Second Lieutenant GEORGE CECIL WALSH, R.A.F., son of the late Mr. C. F. Walsh, and of Mrs. Walsh, 6, Regent's Park Road, Finchley, was married to LAURA, daughter of the late Mr. F. N. SCARFE and of Mrs. Scarfe, Fursby House, Nether Street, Finchley, on May 9th at St. Mary's Church, Finchley.

To be Married.

An engagement is announced between Lieutenant PERCY HARRY BURT, R.A.F., only son of Mr. and Mrs. Harry Burt, of Birmingham, and Miss MAUD HOLLICK JONES, only daughter of Mr. and Mrs. H. B. Jones, of Meriden, Coventry.

A marriage has been arranged, and will shortly take place, between Lieutenant HERBERT JULIAN CARNDUFF, D.S.C., R.N., surviving son of the late Sir Herbert Carnduff, C.I.E., of Calcutta, and Lady Carnduff, of The Grey House, Meads, Eastbourne, and Miss NINA IRIS GRAHAME CHAMBERS, younger daughter of Major William Grahame Chambers, R.A.F.

The marriage arranged between Captain A. H. A. GEM, M.C., Sherwood Foresters, attached R.A.F., son of the Rev. Canon and Mrs. Gem, and WINIFRED RAYMOND, youngest daughter of Mr. and Mrs. J. H. E. GARRETT, will take place at St. Mary Abbot's, Kensington, on June 4th, at 2.

An engagement is announced, and a marriage will shortly take place, between Captain R. HUGHES-CHAMBERLAIN, R.A.F., son of Mr. R. C. Hughes-Chamberlain, late J.P., Nottingham Road, Natal, and MURIEL, only child of Mrs. F. B. SMART, of Montagu Mansions, London.

The engagement is announced between Captain GLYN ROBERTS, R.W.F. and R.A.F., only son of the late Sir John and of Lady Roberts, Llanwnda, Carnarvonshire, and Miss KATHLEEN MACLAREN CAMPBELL, of 25, Newton Place, Glasgow, only daughter of Mr. and Mrs. Alexander Campbell, of Alloa, Scotland.

Items.

The will of Mr. THOMAS TYRER, of Sandwell Mansions, Hampstead, N.W., managing director of Thomas Tyrer and Co. (Ltd.), chemical manufacturers, Stratford, Treasurer and Past President of the Society of Chemical Industry, has been proved at £24,294.



R.F.C. HOSPITAL GRAMOPHONE FUND.

IN addition to the amount acknowledged last week, a further 10s. each has been added from Messrs. Bernard Isaac and Clifford B. Prodger (of the Prodger Isaac Aviation Co.). This, with a "balance" contribution of £20 9s. 6d. from Sir Charles Wakefield, has enabled us to deliver to the Hospital not only one

of the highest grade Æolian Vocalian Cabinet gramophones, but to supplement it with a splendid collection of the most up-to-date records.

Once more we thank the subscribers for their help on behalf of the patients, present and future, of the R.F.C. Hospital.



More Money for U.S. Aviation.

A MESSAGE from Washington states that the U.S. War Department has asked Congress for an appropriation of one thousand million dollars (£200,000,000) for the Army's programme of aircraft production, in addition to the \$640,000,000 (£128,000,000) already expended.

Long Flight in the U.S.

A UNITED STATES military aeroplane fitted with one of the Liberty motors, on April 15th flew from Langley Field, near Norfolk, Va., to Mineola, L.I., a distance of 325 miles, in 3½ hours. Piloted by Major Roy S. Brown, the machine, which carried a passenger, was at an altitude of 12,000 ft. when passing Baltimore, but owing to the cold for the remainder of the journey, the machine was kept at a height of not more than 6,000 ft.

Death of Mr. Gordon-Bennett.

TO Mr. James Gordon-Bennett, the proprietor of the *New York Herald*, who died at Nice on Tuesday, aeronautics owes the Gordon-Bennett Balloon Trophy and the Gordon-Bennett Aviation Trophy, the annual competitions for which did much to stimulate progress a few years back.

The Bombing of Amiens.

MR. HENRY WOOD, of the United Press Association, in a despatch dealing with the destruction of Amiens, says that during the height of the bombardment the Germans effectively used incendiary shells, and nine or ten great fires were often burning simultaneously in various parts of the city. Although

numbers of the Paris firemen were rushed to Amiens for the purpose of fighting the flames, the German aeroplanes, by constantly bombarding the burning districts, especially by night, drove off the firemen, until huge portions of the city were completely gutted.

Destroying the Long-Range Guns.

"PHOTOGRAPHS taken by aviators show the magnificent work accomplished by the gunners, who have countered the German long-range gun, as a result of the valuable information supplied by aviators," says M. Lebouc, deputy for Paris, in the *Intransigant*. "During the day of May 3rd squadrons ascended from eight o'clock in the morning, and regulated the fire until nightfall, and in spite of a violent barrage fire against our counter-batteries at X and Y, it was ascertained with certainty that four large shells scored definite hits, and completely shattered the emplacement of the gigantic gun. The railways on which the heavy pieces are carried have been broken up in numerous places. At present the Germans have no more long-range guns in this battery."

German Aviators in Holland.

A YMUIDEN telegram states that a German naval lieutenant and a sailor were found on May 10th by a Dutch lugger 6 miles north-east of the Haaks lightship on a sinking seaplane and were landed there. The airman sank the seaplane before being taken off. It is also reported that a German biplane landed near Uithuizen, in the province of Groningen. The two occupants have been interned.



The British Air Service



"PER ARDUA AD ASTRA"

The Royal Air Force.

London Gazette Supplement, May 7th.

The following temp. appts. are made at the Air Ministry:—
Staff Officers, 2nd Class.—Lieut. (Temp. Capt.) P. M. Beachcroft, and to be Temp. Maj. while so employed; April 1st.

Staff Officers, 3rd Class.—And to be Temp. Capt. while so employed:—2nd Lieut. W. H. Dallow, Lieut. T. Jones; April 1st. The initials of Capt. W. T. S. Williams, D.S.C., are as now described, and not as in the Gazette of April 2nd.

The following temp. appts. are made:—

Director.—Col. (Temp. Brig.-Gen.) F. R. Scarlett, D.S.O.; April 1st.

Staff Officers, 1st Class.—Maj. (Temp. Lieut.-Col.) C. H. K. Edmonds, D.S.O., Maj. (Temp. Lieut.-Col.) L. H. Strain, D.S.C.; April 1st.

Staff Officers, 2nd Class.—Lieut. (Hon. Capt.) R. F. Maitland, and to be Temp. Maj. while so employed; Capt. (Temp. Maj.) W. C. Michie, Capt. (Temp. Maj.) R. E. Nicoll, Lieut. (Hon. Capt.) H. A. J. Wilson, and to be Temp. Maj. while so employed; April 1st.

Staff Officers, 3rd Class.—Lieut. (Temp. Capt.) L. E. Lander, Lieut. (Temp. Capt.) A. M. Waistell, D.S.C.; April 1st.

To be Temp. Colonels.—Lieut. Col. R. Gordon, D.S.O., while commanding a group; Lieut.-Col. A. M. Longmore, while seniority R.A.F. Officer on the staff of the Commander-in-Chief, Mediterranean; April 1st.

Flying Branch.

Capt. R. S. McClintock to be Temp. Maj. while employed as Maj. (Flying); April 20th.

Lieuts. to be Temp. Capt. while employed as Capt. (Flying):—R. E. Ber-
 ington, (Hon. Capt.) H. G. Fiske, C. H. Taylor; April 3rd. J. M. Batting,
 J. Cullen, W. L. Fenwick, T. S. Ivens, H. M. Moody, R. K. Morris, G. R. Travis;
 April 10th. S. Baker, H. A. Pearson, M.C., G. L. Stedman; April 11th. P. S.
 Burge; April 20th. J. S. Stubbs; April 21st. (Hon. Capt.) J. F. Chisholm;
 (Hon. Capt.) W. F. Cleghorn; April 22nd. (Hon. Capt.) L. W. Jarvis, G. B.
 Solomon; April 23rd. M. H. Findlay, D.S.C., K. R. Napier, L. A. Payne;
 April 25th. R. Affleck, R. F. Browne, E. G. Leake, M.C.; April 26th. G. G.
 Crutchley, P. H. Cummings, A. L. Fleming; April 27th. R. S. Durno; April
 28th. W. Beaver; May 2nd.

The following are granted temp. commissions as 2nd Lieuts. (A. and S.):—
 C. H. Askwith, H. N. V. Barnes, T. E. W. Browne, H. L. Burley, O. H. Dampier-
 Bennett, D. W. Davies, L. C. Hillman, J. D. Horgan, F. J. Kieran, H. S. Matthews,
 D. R. McLachrie, W. S. Page, F. W. Paget, S. J. Saunders, G. F. Smith, G. R. B.
 Smyth, J. J. Sullivan, T. W. Whittaker; April 8th. H. D. McLaren, J. A.
 Robb; April 10th. B. G. Blampied, C. H. Bridge, J. M. Clarke, S. R. Clutter-
 buck; April 12th. H. H. Coulson, H. R. A. V. Punter; April 15th. L. D.
 Brown, W. N. Shuttleworth; April 17th. J. A. E. Steel, D. G. Wassell; April
 27th.

The following are granted temp. commissions as 2nd Lieuts. (Observer Officers):
 A. G. Bishop, H. L. Carter, E. C. Coombes, E. C. Garland, C. J. Lewis, T. F. P.
 Llewellyn, F. L. L. Reis, L. A. Thrower, H. B. V. Vaughan-Evans; April 25th.

The following are granted temp. commissions as 2nd Lieuts. (Kite Balloon
 Officers):—J. C. Buckley, L. R. Grice, W. J. P. Woodhouse; April 5th. G. T.
 Burton, S. C. Capes, R. N. Richards, D. E. Williams; April 6th. A. W. N.
 Evans, G. S. Thomas; April 10th. A. D. E. S. Ades, R. Begg, F. Chambers,
 J. Cranfield, W. Eccles, J. A. Kenyon, G. N. P. Oates, D. Smith, I. A. R. Stede-
 ford, J. W. Watson; April 12th. H. W. Diss; April 16th. S. H. Mabbott-
 M. H. Jeff; April 18th. R. H. Bailey; April 19th. C. N. Crofton-Sleigh,
 H. Stephenson, W. E. Titchmarsh; April 20th. W. O. Marshall; April 22nd.
 R. G. K. Baker, C. H. Coggins, R. G. A. Colley, J. Garrety, A. C. E. Smith;
 April 23rd. J. S. Corrigan, H. Grellier, A. D. M. Spear; April 24th. K. G.
 Macmillan; April 25th.

Capt. and Hon. Maj. (Maj., Ind. Army) H. A. Hill resigns his commission
 on ceasing to be employed; May 1st.

Lieut. C. A. Malcolmson resigns his commission; May 8th.

Lieut. (Lieut., Can. Local Forces) J. F. Proctor relinquishes his commission
 on account of ill-health contracted on active service; May 8th.

Lieut. D. M. Scrimgeour resigns his commission to resume his medical studies
 and is granted hon. rank of Lieut.; May 8th.

Administrative Branch.

F. H. G. Playfair (Lieut.-Col., T.F. Res.) is granted a temp. commission as
 Lieut.-Col.; April 6th.

Lieuts. to be Temp. Capt. while employed as Admin. Capt.:—W. J. King;
 April 30th. P. R. Hutchinson, L. L. W. Smythe; May 9th.

2nd Lieuts. to be Temp. Lieuts. while employed as Admin. Lieuts.:—H.
 Norrington; April 1st. A. J. Bright, A. Miller; April 28th. (Hon. Lieut.)
 R. L. Hubbard; April 30th. (Hon. Lieut.) L. B. Clarkson; May 4th.

The following are granted temp. commissions as 2nd Lieuts.:—W. Borland,
 A. C. Gunnison, R. S. Dias, B. J. M. Dumas, E. L. Henry, G. H. Keeble, C. Lewis,
 C. Marley, J. Mellor, J. M. Russell, A. Scott, R. O. Vasey, L. Wardley, W. G.
 Willis; May 1st.

The following Cadets are granted temp. commissions as 2nd Lieuts. (Adminis-
 trative):—R. M. Freshwater, P. J. O'Brien; April 12th. A. J. Ashton, G. W.
 Axtell, H. V. David, C. D. Davis, P. T. Grant, J. H. Hampton, V. S. G. Hawkins,
 W. Riley, A. S. Underhill; April 17th. C. Donald, H. R. Whitehead, E. G.
 Bugg, F. F. Schorn, D. L. Gould, C. Brooke, D. McN. Livingstone, F. D. McClint-
 on, W. Bartley; April 23rd. A. H. Allardice, W. Blackhurst, W. J. Bock-
 ing, S. R. Bolton, T. Fairley, W. Knight, E. Simpson, E. T. Stead; April 20th.
 F. Butler, R. Davies, G. Harrison, J. N. Holman, W. E. Jones, A. Low, F. J. W.
 Miles, J. L. Muir, R. P. Rodick, H. L. Shearer, G. K. Smith, F. Taylor, D. A.
 Watson; May 6th.

2nd Lieut. W. H. Ayre resigns his commission; May 8th.

2nd Lieut. G. R. Davies relinquishes his commission on account of ill-health
 contracted on active service, and is granted the hon. rank of 2nd Lieut.; May
 8th.

2nd Lieut. S. J. Dodson resigns his commission; May 8th.

2nd Lieut. F. E. Schultz resigns his commission; May 8th.

Technical Branch.

Maj. J. Mead, M.C., to be Temp. Lieut.-Col. while employed as Lieut.-Col.
 (Tech.); April 27th.

To be Temp. Maj. while employed as Maj. (Tech.):—Lieut. (Temp. Capt.)
 O. Stewart, M.C.; April 10th. Lieut. (Temp. Capt.) O. Lindquist; April 18th.

Lieut. A. H. Chapman to be Temp. Capt. while employed as Capt. (Tech.);
 April 23rd.

2nd Lieut. L. S. Seccombe to be Temp. Capt. (without the pay and allowances
 of that rank) while specially employed; April 30th.

Lieuts. to be Temp. Capt. while employed as Capt. (Tech.):—H. E. O.
 Ellis, M.C., W. H. Hoffert, G. McKerrrow; April 1st. E. McR. Cockell; April
 20th. P. H. M. Currie, A. Hawley; May 1st. R. Scott; May 3rd.

2nd Lieuts. to be Temp. Lieuts. while employed as Lieuts. (Tech.):—E. His-
 cock, (Hon. Lieut.) R. T. Lattey; April 1st. E. F. Cameron; April 5th;
 (Hon. Lieut.) A. T. Thompson; April 14th. (Hon. Lieut.) W. E. Harper,
 M.C., H. N. Stradling, J. W. Tattersall; April 20th. P. S. Riach; May 1st.

To be Temp. 2nd Lieuts. while employed as 2nd Lieuts. (Tech.):—S. K.
 D'A. de Ferrars (Capt., Lond. R. (T.F.)), and to be Hon. Capt.; A. J. Dick

(Lieut., H.L.I. (T.F.)), and to be Hon. Lieut.; (Hon. Capt.) C. B. Dick-Cleland
 (from A. and S. Lt.); C. E. Ebbutt (Temp. 2nd Lieut., Gen. List); J. C.
 Graddon (from Admin. Lieut.), and to be Hon. Lieut.; W. Hill (Temp. 2nd Lieut.,
 Gen. List); D. F. Hollins (Temp. 2nd Lieut., Gen. List); G. P. Harding, M.C.
 (from a Flying Officer, Observer); J. A. Hone (from a Flying Officer, Observer);
 W. A. Lepper (Lieut., E. Kent R.), and to be Hon. Lieut.; C. L. Loyd (Lieut.,
 E. Kent R.), and to be Hon. Lieut.; P. J. McChesney (Temp. Lieut., R. Fus.),
 and to be Hon. Lieut.; A. M. R. Nicholson (2nd Lieut., Gen. List); G. W.
 North (Lieut., L'pool R.), and to be Hon. Lieut.; H. M. Over (Temp. Lieut.,
 Gen. List), and to be Hon. Lieut.; J. H. Reynold (Temp. 2nd Lieut., Gen. List);
 I. L. Roy (from A. and S. Lieut.); H. L. Soulsby (Lieut., R.F.A., T.F.), and
 to be Hon. Lieut.; W. R. Trounson (Temp. Lieut., M.G.C.), and to be Hon.
 Lieut.; C. D. Watt (Temp. 2nd Lieut., Gen. List; April 4th.

Medical Branch.

T. Gibbons to be Temp. Capt., from Admin. Capt.; April 27th.

London Gazette Supplement, May 10th.

The following temporary appointments are made at the Air Ministry:—
Staff Officer, 2nd Class.—Lieut. (Temp. Capt.) W. P. Groves, and to be Temp.
 Maj. while so employed, vice Capt. (Temp. Maj.) Hon. M. Baring; April 27th.

Staff Officers, 3rd Class.—Capt. (actg. Maj.) Hon. L. G. W. Guest, Lieut.
 (Temp. Capt.) S. T. Ravenscroft; April 27th.

The following temporary appointments are made:—Col. (Temp. Brig.-Genl.)
 J. F. A. Higgins, D.S.O., to be Area Comdr., and to be Temp. Maj.-Gen. while
 so employed, vice Lieut.-Col. (Temp. Brig.-Gen.) C. A. H. Longcroft, D.S.O.;
 April 29th. Lieut.-Col. (Temp. Col.) G. M. Griffiths to retain his Temp. rank
 while employed as Director of Aeronautics; April 1st.

Divisional Commander.—Lieut.-Col. (Temp. Maj.-Gen.) W. G. H. Salmond,
 D.S.O., and to retain his temp. rank while so employed; April 1st.

Brigade Commanders.—Lieut.-Col. (Temp. Brig.-Gen. in Army), A. E. Borton,
 D.S.O., and to retain his temp. rank while so employed; Lieut.-Col. (Temp.
 Brig.-Gen. in Army) P. L. W. Herbert, and to retain his temp. rank while so
 employed; April 1st.

Group Commander.—Lieut.-Col. (Temp. Col.) U. J. D. Bourke, and to retain
 his temp. rank while so employed; April 1st.

Staff Officers, 1st Class.—Maj. (Temp. Lieut.-Col.) C. Fraser, M.C., and to
 retain his temp. rank while so employed; Maj. (Temp. Lieut.-Col.) (now Temp.
 Col.) N. D. K. MacEwen, D.S.O., and to retain his temp. rank while so employed;
 April 1st.

Staff Officers, 2nd Class.—And to be Temp. Maj. while so employed, if not
 already holding that rank:—Capt. W. B. Adams, Capt. O. T. Royd, M.C., Capt.
 (Temp. Maj.) W. D. Long, Capt. (Hon. Maj.) N. M. Martin, Lieut. (Temp. Capt.)
 C. E. Wardle, Lieut. (Temp. Capt.) C. W. Wise; April 1st.

Staff Officers, 3rd Class.—And to be Temp. Capt. while so employed, if not
 already holding that rank:—Lieut. (Temp. Capt.) W. L. Birch, Lieut. (Temp.
 Capt.) V. Buxton, and Lieut. (Hon. Lieut.) K. A. C. Creswell, Capt. W. G. M.
 Crothers, Capt. R. B. C. M. T. de Poix, Capt. (Temp. Maj.) G. Disney, C. C.
 Hansford (Lieut., R.H., and R.F.A.), (T.F.), and is granted a temp. commission
 as Lieut., Lieut. (Temp. Capt.) J. McGlen, Capt. T. C. Macauley, M.C., Capt.
 C. H. Smith, Capt. C. C. Treat; April 1st.

Flying Branch.—Lieut. (Temp. Capt.) W. R. B. McBain to be Temp. Maj.
 while employed as Maj. (Flying); April 11th. Lieut. (Temp. Capt.) M. A.
 Hancock relinquishes the rank of Temp. Capt. on appointment as Temp. Lieut.
 (Flying); April 26th. Lieuts. to be Temp. Capt. while employed as Capt.
 (Flying):—S. Stanger; April 16th. G. H. Bush; April 21st. C. J. S. Dear-
 love, L. H. Jones, O. J. F. Scholte; May 4th. Lieut. (Lieut., Can. Local Forces)
 J. H. V. Cameron relinquishes his commission on ceasing to be employed on
 account of ill-health contracted on active service; May 12th.

Administrative Branch.

C. F. Apthorp is granted a temp. commission as Lieut.; April 1st.

Technical Branch.

2nd Lieut. M. Cohen to be Temp. Lieut. while employed as Lieut. (Tech.);
 April 1st.

Memoranda.

All Warrant Officers, 1st Class (and Warrant Officers, R.N., with seniority
 prior to May 18th, 1915) who on March 31st were serving with the R.N.A.S.
 are granted temp. commissions as Lieuts. in the Royal Air Force with effect
 from April 1st.

All Warrant Officers, 2nd Class (and Warrant Officers, R.N., with seniority
 or subsequent to May 18th, 1915), who on March 31st were serving with the
 R.N.A.S., are granted temp. commissions as 2nd Lieuts. in the Royal Air Force
 with effect from April 1st.

Lieut. C. F. Apthorp to be Temp. Capt. while specially employed; April 1st.

Royal Flying Corps (Military Wing).

London Gazette Supplement, May 7th.

The following appointments are made:—

Special Appointment.—(Graded as Flight Commander).—Capt. V. H. Huston,
 M.C., Canadian A.S.C., a Flying Officer; March 20th.

Flying Officers.—Temp. 2nd Lieuts. (on prob.) Gen. List, and to be confirmed
 in their rank:—G. F. Bayne; Sept. 22nd, 1917. A. E. Parsons; Dec. 31st,
 1917. G. L. Vezine; Jan. 28th. J. A. Nolan; Feb. 2nd. R. J. Stone; Feb.
 12th. V. Z. Stone; Feb. 13th. L. W. Wilson, F. R. L. Lazier; Feb. 14th.
 A. W. Cameron; Feb. 15th. J. N. Catling, C. C. Casewell; Feb. 19th. J. E.
 Tanner; Feb. 21st. V. J. Flynn; Feb. 22nd. A. F. Platt; Feb. 23rd. J. E.
 A. Gray; Feb. 25th. C. A. Stewart, R. R. Spafford; Feb. 28th. W. A.
 McKay; March 2nd. R. G. Scott; March 3rd. W. R. H. Standing; March
 5th. J. B. Fitzgerald; March 19th.

Equipment Officers, 3rd Class.—Temp. 2nd Lieuts. (on prob.), Gen. List, and
 to be confirmed in their rank:—F. G. Farrell; Dec. 14th, 1917. H. Cutler;
 Jan. 7th. L. Russell; March 6th. V. H. Appleyard, F. G. Crowley, H. H.
 Arnold, E. J. S. Aston, A. W. Coaten, F. Baxter, F. G. Buck, R. E. Cook, E.
 Downer, W. H. Bull, E. B. Flanagan; March 8th. G. H. Davis; March 25th.

Schools of Instruction.—Schools of Technical Training.

Assistant Instructor.—Graded as an Equipment Officer, 2nd Class.—Temp.
 2nd Lieut. A. G. Harrison, Gen. List, a Flying Officer, and to be Temp. Lieut.
 while so employed; March 5th.

General List.—Temp. Lieut. J. E. B. D. Cochrane, S. Afr. Inf., is transfd.;
 Jan. 23rd. Temp. 2nd Lieut. C. B. Boughton to be Temp. Lieut.; July 1st,
 1917. Pte. C. Roper, from A.S.C., to be Temp. 2nd Lieut.; Feb. 8th.

To be Temp. 2nd Lieuts. (on prob.)—W. J. Scott; Oct. 28th, 1917. R. G.
 Scott; Jan. 20th. J. E. Tanner; Feb. 14th. C. C. Casewell; Feb. 15th.
 R. H. Regan; Feb. 17th. J. E. A. Gray; Feb. 18th. W. A. McKay; Feb. 21st.

London Gazette Supplement, May 8th.

The following appointments are made:—

Wing Commander.—Capt. (Temp. Lieut.-Col.) L. A. Strange, M.C., Dorset
 R., an Asst. Comdt. (graded as a Wing Comdr.), Central Flying School, and to
 retain his temp. rank while so employed; March 15th, seniority April 1st,
 1917.

Flight Commanders.—From Flying Officers:—Capt. T. Wells, M.C., York L.I., S.R.; and to be Temp. Capt. while so employed.—Lieut. F. MacB. Paul, R. War. R.; Temp. Lieut. E. H. Russell, Gen. List; Temp. Lieut. C. W. Cudemore, M.C., Gen. List; Temp. Lieut. L. G. Paget, Gen. List; Lieut. H. C. Burdett, T.F. Res.; Temp. Lieut. E. A. Worrall, Gen. List (since killed); Temp. Lieut. C. C. Hayward, Gen. List; Lieut. J. F. Lawson, R.G.A. (T.F.); Temp. 2nd Lieut. (Temp. Lieut.) W. Bruce, Gen. List; 2nd Lieut. L. M. Van Eyssen, S.R.; Feb. 1st, and Lieut. (Temp. Lieut.) K. K. Muspratt, M.C., Dorset R. (since killed); Feb. 11th. Capt. D. A. Tuck, Yeo. (T.F.); Capt. S. H. Starey, Shrop. L.I., S.R.; March 1st. Temp. Capt. W. H. Haynes, D.S.O., Gen. List; Temp. Capt. G. M. Boumphrey, attd. S. Lan. R.; and to be Temp. Capt. while so employed.—Lieut. R. W. Young, S.R.; Lieut. W. O. Phillips, S.R.; Lieut. L. F. Beynon, Mon. R. (T.F.); Temp. Lieut. E. T. Carpenter, Gen. List; Lieut. N. E. Chandler, S.R.; Lieut. W. H. Demel, Manch. R. (T.F.); Lieut. D. E. P. Chaplin, R.A.; Lieut. N. H. Colson, S.R.; Lieut. S. Hay, S.R.; 2nd Lieut. C. L. Milburn, S.R.; Temp. 2nd Lieut. E. C. Morris, Gen. List; March 15th. Capt. G. Chadwick, Manch. R. (T.F.); March 27th.

Flying Officers.—Temp. 2nd Lieut. (on prob.) L. Bennett, Gen. List, and to be confirmed in his rank; March 6th. The appointment of Temp. 2nd Lieut. F. C. Annesley, Gen. List, notified in *Gazette* of April 24th, is antedated to March 2nd.

Special Appointment (graded as a Park Commander).—Lieut. (Temp. Capt.) F. W. H. Lerwill, S.R., an Equipment Officer, 1st Class, and to be Temp. Maj. while so employed; March 25th.

General List.—Temp. 2nd Lieut. H. McKenzie to be Temp. Lieut.; July 4th, 1917.

Temp. 2nd Lieut. E. C. Matthews to take rank and precedence in the Corps and in the Army as if his appointment as Temp. 2nd Lieut. bore date March 11th. The following to be Temp. 2nd Lieuts.:—L. Cpl. A. V. Goble, from R. Sussex R.; Feb. 1st. Sgt. W. H. Gann, from E. Kent R.; Feb. 11th.

London Gazette Supplement, May 9th.

The following appointments are made:—

Flight Commanders.—From Flying Officers, and to be Temp. Capt. while so employed:—Lieut. C. L. Veitch, N. Lan. R. (T.F.); Lieut. S. H. Bell, S.R.; Temp. Lieut. B. McEntegart, Gen. List; Temp. Lieut. G. O. Venn, Gen. List; Lieut. P. Warburton, R.G.A. (T.F.); Lieut. W. E. Dawson, R.F.A. (T.F.); Temp. Lieut. C. Pilkington, Shops. L.I., and to be transf'd. to R.F.C., Gen. List; Lieut. S. L. Quine, M.C., Ches. R., S.R.; Temp. Lieut. S. H. Preston, Gen. List; Lieut. M. Minter, S.R.; Temp. 2nd Lieut. (Temp. Lieut.) G. le B. Diamond, attd. Essex R., and to be transf'd. to R.F.C. Gen. List; 2nd Lieut. N. H. England, S.R.; Temp. Lieut. G. A. D. Hancock, Gen. List; Temp. 2nd Lieut. A. Muir, Gen. List; Lieut. W. B. Young, S.R.; Lieut. J. G. Aronson, R. Lan. R., S.R.; Temp. Lieut. R. S. S. Ingram, Gen. List; Lieut. L. L. M. Evans, S.R.; Temp. Lieut. W. T. Price, M.C., attd. R. War. R., and to be transf'd. to R.F.C. Gen. List; Temp. Lieut. L. C. Burcher, Gen. List; Lieut. F. O. Cave, M.C., Rif. Brig.; 2nd Lieut. G. G. Callender, S.R.; 2nd Lieut. (Temp. Lieut.) G. W. N. R. Haynes, R. Muns. Fus., and to be secd.; Temp. Lieut. C. L. Blake; Temp. Lieut. D. V. Armstrong, Gen. List; Temp. Lieut. T. S. Edleston, Gen. List; March 1st. Lieut. D. J. Nickle, Canadian Forestry Corps; March 30th.

Flying Officers.—Temp. 2nd Lieut. J. T. Turner, R. War. R., and to be transf'd. to R.F.C., Gen. List; Feb. 28th. Temp. Lieut. W. C. Dale, Gen. List; March 1st. Capt. F. E. Williams, Welsh R. (T.F.), from a Flying Officer (Obs.), seniority Jan. 20th, 1917; 2nd Lieut. E. Rogers, R.A., and to be secd.; March 4th. Lieut. E. S. Vincer, R. Dub. Fus., S.R., and to be secd.; March 7th.

Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank.—W. K. Bradley; Nov. 27th, 1917. A. M. Rosenbleet; Jan. 28th. J. A. Atkins, A. R. Jackson; Feb. 27th. E. G. Amatt, J. E. Howell; Feb. 28th. F. A. N. Duk, S. G. Beard, A. O. Greeves; March 1st. E. Milner, H. Curtis-Beale, F. R. Hayward, R. A. Evans; March 2nd. F. M. Panzetta; March 3rd. A. Blount, A. V. Goble; March 4th. G. H. Bastin, L. M. McNab, C. D. Pratt; March 5th. H. O'Connor, J. F. Nunn; March 6th. J. R. H. Hewlett; March 7th. W. S. Rogers; March 10th. W. L. P. Gould; March 30th.

Appointment of Temp. 2nd Lieut. M. E. Bradley, Gen. List, notified in *Gazette* of April 5th, is cancelled.

Flying Officers (Observers).—Temp. Lieut. R. W. Parkinson, L'pool R., seniority Aug. 17th, 1917, and to be transf'd. to R.F.C., Gen. List; Lieut. G. E. Hillman, Lond. R. (T.F.), seniority Sept. 3rd, 1917, and to be secd.; Feb. 2nd. 2nd Lieut. P. C. Taylor, Lond. R. (T.F.), and to be secd.; Feb. 9th, seniority Sept. 4th, 1917. Temp. 2nd Lieut. H. P. Searle, Leic. R., and to be transf'd. to R.F.C., Gen. List; Feb. 2nd, seniority Sept. 24th, 1917. Feb. 20th, seniority Dec. 1st, 1917; Lieut. G. L. Gould, R. W. Kent R. (T.F.), and to be secd.; Lieut. (actg. Capt.) P. G. Du Val, Lond. R. (T.F.), to relinquish his actg. rank and to be secd.; Lieut. L. A. G. Dalziel, R. Sc. Fus., and to be secd.; Feb. 24th, seniority Dec. 1st, 1917. Temp. 2nd Lieut. C. G. Bushe, Br. W. Ind. R.; Feb. 2nd, seniority Dec. 15th, 1917. Lieut. E. C. Kinghorn, Bord. R. (T.F.), from actg. Capt. Ox. and Bucks L.I., and to be secd.; March 1st, seniority Jan. 29th. Temp. Capt. F. W. Atherton, M.C., R.A., and to be transf'd. to R.F.C., Gen. List; March 2nd, seniority Feb. 1st.

Equipment Officers, 1st Class.—2nd Lieut. (Temp. Lieut.) A. Graham, S.R., from the 2nd Class, and to be Temp. Capt. while so employed; Feb. 7th.

2nd Class.—From the 3rd Class:—Temp. 2nd Lieut. E. C. Richardson, Gen. List, and to be Temp. Lieut. while so employed; Oct. 12th, 1917. Temp. 2nd Lieut. A. C. Hankey, Gen. List, and to be Temp. Lieut. while so employed; Feb. 7th. Lieut. A. F. K. White, Suff. R. (T.F.); Nov. 14th, 1917.

3rd Class.—Temp. 2nd Lieut. (on prob.) E. C. Richardson, Gen. List, and to be confirmed in his rank; Nov. 11th, 1916.

General List.—Lieuts. to be Temp. Capt. while specially employed:—W. Watson, A. Cyclist Corps; J. S. Holloway, Dorset R.; Jan. 15th.

Cpl. G. S. George, from M.G. Corps, to be Temp. 2nd Lieut.; Feb. 3rd.

To be Temp. 2nd Lieuts. (on prob.).—P. J. Small, late Temp. 2nd Lieut., North'n R.; Dec. 28th, 1917. C. Wiseley; Feb. 16th. R. J. Burley; March 4th.

London Gazette Supplement, May 10th.

The following appointments are made:—

Flight Commander.—Temp. Lieut. C. A. Taylor, Gen. List, from a Flying Officer, and to be Temp. Capt. while so employed; Jan. 1st.

Flying Officers.—Capt. J. C. A. Davis, Rif. Brig., S.R., from a Flying Officer (Obs.), seniority March 21st, 1917. Lieut. W. D. Blatch, Yeo. (T.F.), and to be secd.; Feb. 22nd. Temp. Capt. E. E. Froneman, Gen. List, and Lieut. E. H. Evans, R. W. Kent R. (T.F.), and to be secd.; Feb. 24th. Capt. W. P. Spero, W. Ontario R., Can. Exped. Force, from a Flying Officer (Obs.); Feb. 25th, seniority April 23rd, 1917. 2nd Lieut. C. G. Fenton, M.C., S.R., from a Flying Officer (Obs.); Feb. 26th, seniority May 16th, 1917. Feb. 27th. Lieut. F. O. Woodman, M.C., Lond. R. (T.F.), and to be secd.; Temp. 2nd Lieut. G. B. Robeson, Gen. List, from a Flying Officer (Obs.), seniority May 10th, 1917. Lieut. A. Trewheeler, R. Lanc. R., S.R., and to be secd.; March 2nd. Temp. Lieut. J. A. Hoogterp, Gen. List, from a Flying Officer (Obs.); March 25th, seniority Sept. 24th, 1917.

Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank.—T. W. L. Burke; Dec. 19th, 1917. C. J. Baily, H. D. Preston; Feb. 1st. J. Valentine; Feb. 7th. J. H. L. Gower; Feb. 14th. G. T. Eveleigh; Feb. 15th. C. S. Bolsby; Feb. 16th. E. V. Holland; Feb. 17th. L. Kinet; Feb. 19th. J. E. Atkinson, G. W. Thorpe; Feb. 21st. L. H. Angus, G. F. Spaulding, W. E. Wright, G. G. Fonseca; Feb. 23rd. D. W. Holmes, D. A. Harding, D. R. Grant, J. Robertson, E. A. Cherry, G. H. Kernick; Feb. 24th. G. A. Kennedy; Feb. 25th. A. T. Simons; Feb. 26th. S. H. Ware, F. Fredrickson, J. Wickett, D. W. Lang; Feb. 27th. T. J. Cook, V. A. Boule, A. W.

Cullington, A. T. Burgess, F. W. Marshall, D. G. Conaty; Feb. 28th. H. S. Fey; March 4th. W. J. Gleason, A. B. Agnew; March 5th. J. Cross; March 16th. C. M. French; March 18th. H. T. Hunter; March 24th. W. C. Mead; March 25th. A. Buchanan, E. MacD. Jarvis; March 28th. A. E. Alderton; March 31st. The appointment of Temp. 2nd Lieut. A. L. Simpson, Gen. List (since killed), notified in the *Gazette* of March 9th, is post-dated to March 19th.

Flying Officers (Observers).—Capt. C. M. Manson, R.W. Surr. R. (T.F.), and to be secd.; Nov. 27th, 1917, with seniority from Sept. 27th, 1917. Temp. 2nd Lieut. W. B. Cockran, L'pool R., and to be transf'd. to R.F.C., Gen. List; Nov. 29th, 1917, with seniority from Sept. 29th, 1917. Lieut. J. L. Benvenuti, R.G.A. (T.F.), and to be secd.; Dec. 15th, 1917, with seniority from Oct. 15th, 1917. Dec. 18th, 1917, with seniority from Oct. 18th, 1917. Temp. Lieut. G. W. Holderness, A. Cyclist Corps, and to be transf'd. to R.F.C., Gen. List; Lieut. R. A. Tarleton, R.G.A. (T.F.), and to be secd.; Temp. Lieut. D. B. Thompson, R.A., and to be transf'd. to R.F.C., Gen. List; March 1st, with seniority from Nov. 4th, 1917. Lieut. P. R. Bowen, M.C., Welsh R. (T.F.), and to be secd.; Jan. 10th, with seniority from Nov. 10th, 1917. Temp. Lieut. E. T. Osborne, S. Wales Bord., and to be transf'd. to R.F.C., Gen. List; March 4th, with seniority from Nov. 14th, 1917. Lieut. G. Still, Cam'n Highrs. (T.F.), and to be secd.; Feb. 26th, with seniority from Nov. 23rd, 1917. Temp. Lieut. A. R. Gurney, M.G. Corps (Motor), and to be transf'd. to R.F.C., Gen. List; Feb. 20th, with seniority from Dec. 1st, 1917.

Balloon Commander.—(Graded as a Balloon Officer).—2nd Lieut. F. H. Postlethwaite, S.R., from a Balloon Officer, and to be Temp. Lieut. whilst so employed; Feb. 1st.

Schools of Instruction.—Central Flying School.

Instructor.—Lieut. (Temp. Capt.) C. D. Fellowes, M.C., Yeo. (T.F.), a Flight Comdr., vice Lieut. (Temp. Capt.) H. W. G. Jones, M.C., Welsh R. (T.F.); March 31st.

General List.—Hon. Lieut. R. I. Paiba, late Lab. Corps, to be Temp. Lieut.; March 13th. To be Temp. 2nd Lieuts. (on prob.):—Cadet G. T. Coles, from R.F.C.; Feb. 21st. J. C. Gilchrist, J. L. Grant, J. N. Kavanagh, J. M. Bacon, D. K. Winton; March 3rd. W. E. Baxter; March 4th. A. M. Dunstan; March 5th.

Supplementary to Regular Corps.—2nd Lieut. H. E. Duncan to be Lieut.; Feb. 14th.

London Gazette Supplement, May 11th.

Special Appointments.—(Graded for purposes of pay as a Staff. Capt. whilst commanding a Sqdn., R.F.C., Cdt. Wing.)—Capt. P. C. Suckling, attd. R. Fus., and to be transf'd. to R.F.C., Gen. List; March 1st.

The following appointments are made:—
Flying Officers.—2nd Lieut. H. N. O'Donnell, S.R., from an Equipment Officer, 3rd Class; Feb. 21st.

Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank.—P. G. Lewis; Nov. 1st, 1917. F. K. Laver; Feb. 12th. V. W. V. Lowrie; Feb. 20th. C. Forster; March 31st.

Flying Officers (Observers).—Lieut. H. C. E. C. P. Dalrymple, R.G.A., S.R., from a Balloon Officer; March 13th, seniority Oct. 5th, 1917. Lieut. (Temp. Capt.) W. D. Vernon, Lond. R. (T.F.), to relinquish his temp. rank and to be secd.; Dec. 30th, 1917, seniority Oct. 12th, 1917. 2nd Lieut. J. H. Hirst, W. York R. (T.F.), and to be secd.; March 19th, seniority Nov. 4th, 1917. Temp. 2nd Lieut. J. W. C. Dick, R. Scots, seniority Nov. 8th, 1917, and to be transf'd. to R.F.C., Gen. List; 2nd Lieut. G. H. Halls, Lond. R. (T.F.), seniority Nov. 20th, 1917, and to be secd.; 2nd Lieut. L. F. Handford, Lond. R. (T.F.), seniority Dec. 13th, 1917, and to be secd.; March 20th. With seniority Dec. 30th, 1917:—Lieut. C. E. Kendall, R.A., and to be secd.; Temp. 2nd Lieut. V. Beeton, S. Afr. Inf.; 2nd Lieut. C. B. Wilkinson, R.F.A., S.R.; Lieut. M. A. F. Brown, R.F.A. (T.F.), seniority Dec. 31st, 1917, and to be secd.; Lieut. J. D. Moses, Manitoba R., Canadian Exped. Force, seniority Jan. 3rd. March 19th, seniority Jan. 4th. Lieut. A. W. Miller, R.E. (T.F.); Temp. Lieut. J. Thomson, R.E. And to be transf'd. to R.F.C., Gen. List, March 24th, seniority Jan. 21st. Temp. 2nd Lieut. F. H. Kelf, Norf. R.; Temp. 2nd Lieut. T. M. Doley, attd. Worc. R.

Temp. Lieut. H. G. Burgess, S. Staff. R.; March 19th, seniority Jan. 29th, and to be transf'd. to R.F.C., Gen. List; 2nd Lieut. D. Wills, North'n R., and to be secd.; March 25th, seniority Feb. 27th. Lieut. R. M. Montgomery, R.F.A. (T.F.), and to be secd.; March 24th, seniority Feb. 20th. 2nd Lieut. D. J. Hugh-Jones, R. W. Fus., and to be secd.; March 31st, seniority March 6th.

Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank.—F. H. Abell; Feb. 1st, seniority Sept. 25th, 1917. R. H. Boyd (since killed); March 20th, seniority Dec. 12th, 1917.

Instructor in Gunnery (graded as an Equipment Officer, 1st Class).—2nd Lieut. P. H. R. Whittet, M.C., S.R., an Equipment Officer, 3rd Class, and to be Temp. Capt. while so employed; March 24th.

Adjutant.—Lieut. (Temp. Capt.) C. W. Pollock, Durh. L.I., S.R., from a Garr. Bn., R. W. Fus.; Dec. 18th, 1917.

Equipment Officers, 1st Class.—Capt. O. I. Preston, M.C., Notts. and Derby, R. (T.F.), from the 2nd Class; Nov. 27th, 1917, seniority Sept. 20th, 1917. (Substituted for notification in *Gazette* of Feb. 26th.)

2nd Class.—From the 3rd Class.—Lieut. H. C. Williamson; Jan. 1st. Lieut. H. Maccoy, Lond. R. (T.F.); Feb. 28th.

3rd Class.—Lieut. C. D. Jackman, Norf. R., S.R., and to be secd.; Feb. 6th. Lieut. W. E. Humphreys, Leins. R., S.R., from attd. M.G. Corps; March 4th. Lieut. M. F. Buller, Rif. Brig., and to be secd.; Temp. Lieut. J. S. Franklin, K.O.S.B., and to be transf'd. to R.F.C., Gen. List; March 26th. Lieut. R. E. Moore, R.F.A., S.R.; March 28th.

Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank.—F. P. Johnson; Dec. 1st, 1917. W. H. Southwood, F. T. Sanford; March 21st. P. J. Smail, W. A. Russell; March 26th. F. O. Keenan; March 28th.

Schools of Instruction.—School of Military Aeronautics.

Assistant Commandant (graded as a Park Commander).—Maj. (Capt., Res. of Officers) W. J. Locker, N. Staff. R., S.R.; Jan. 1st.

Armament School.

Instructor in Gunnery (graded as an Equipment Officer, 1st Class).—The appointment of 2nd Lieut. (Temp. Capt.) P. H. R. Whittet, M.C., S.R., notified in *Gazette* of April 22nd, is cancelled.

General List.—The initials of Temp. 2nd Lieut. H. L. W. Flynn are as now described, and not as in the *Gazette* of Dec. 5th, 1917, and subsequent *Gazettes*. The surname of Temp. 2nd Lieut. (on prob.) G. C. D. Swapp is as now described and not as in the *Gazette* of March 19th.

London Gazette Supplement, May 13th.

The following appointments are made:—

Flying Officers.—Capt. W. Elliot, A.S.C., and to be secd. (Jan. 5th). The appointment of Temp. 2nd Lieut. (acting Capt.) W. Elliott, A.S.C., notified in *Gazette* of March 20th is cancelled.

Equipment Officer, 3rd Class.—Temp. 2nd Lieut. (on prob.) W. J. Scott, Gen. List, and to be confirmed in his rank (Dec. 9th, 1917).

General List.—Hon. Lieut. F. V. Bell to be Temp. Lieut. (Mar. 1st).

To be Temp. Second Lieutenants.—Sgt. T. L. Price, from R.W. Fus.; (Dec. 15th, 1917). Pte. F. P. Serginson, from Trg. Res.; (Feb. 5th). R. C. Ryan, late Temp. 2nd Lieut.; (March 28th).

To be Temp. Second Lieutenants (on prob.).—F. W. Pearson; (Mar. 5th). D. G. Russell; (Mar. 6th). R. Z. Conner, J. D. Clemence, L. A. Fanning (Mar. 7th). D. Bonnard, R. S. McKim; (Mar. 8th). G. Hook; (Mar. 11th).

AVIATION IN PARLIAMENT.

Resignation of Sir H. Norman.

Mr. P. A. HARRIS on May 6th asked the Prime Minister whether the right hon. Baronet the Member for Blackburn has resigned his position on the Air Council; if so, what is the reason for his resignation; and who has been appointed to take his place?

The Under-Secretary of State, Air Ministry (Major Baird): The reply to the first part of the question is in the affirmative. The right hon. Baronet the Member for Blackburn, having been appointed to the Air Council by the late Secretary of State, naturally placed his resignation in the hands of the new Secretary of State, who accepted it, having decided that it is desirable to reduce the size of the Air Council. The vacancy has not been filled.

Mr. P. A. Harris: Did the hon. Baronet the Member for Blackburn hold his position on the Air Council as a Member of this House and a Privy Councillor, or as an officer holding a commission?

Major Baird: He was appointed by the late Secretary of State as an additional member. There is no connection either with his membership of this House or with his holding a commission.

Sir W. Essex: Have others, the hon. and gallant gentleman included, tendered their resignations for the same reason, and have they been accepted or rejected?

Major Baird: The hon. Baronet was an additional member appointed definitely by the Secretary of State.

Mr. Hogge: Will the hon. and gallant gentleman see that some other appointment is given to the hon. Baronet?

Naval and Military Council.

Mr. G. LAMBERT asked the Prime Minister if he will consider the formation of a council consisting of Admiral Lord Fisher, Admiral Lord Jellicoe, General Sir W. Robertson, and General Sir H. Trenchard for the purpose of assisting the Government in the conduct of the War?

Mr. Bonar Law: The Government is not prepared to adopt my right hon. friend's suggestion.

Mr. Lambert: Is the Government so rich in geniuses that it can afford to dispense with the services of these eminent men?

Mr. Bonar Law: I do not know about the extent of its riches of that kind, but I do know that the Government must be responsible, and must be themselves the judges as to who their advisers may be.

Mr. G. Faber: Does not the right hon. gentleman consider the time has now come when the War Cabinet should take into its ranks members of military and naval experience?

Mr. Bonar Law: As I have said, the responsibility is that of the Government, and it takes, and will continue to take, expert advice which it thinks is the best available.

Mr. Faber: If the country goes down, is that any consolation to the country?

Mr. Bonar Law: It will be the fault of the Government, and also of the House of Commons which supports it.

Enemy Air Raids Compensation.

COLONEL W. THORNE asked the Chancellor of the Exchequer whether the dependants of persons killed in air raids are entitled to compensation; if so by what methods the amount of compensation to be paid in each case is decided upon; and whether he will favourably consider the granting of pensions to such dependants on a scale similar to those granted to dependants of soldiers killed in the War?

Mr. Bonar Law: The dependants of persons killed in air raids are not entitled as of right to compensation, unless the circumstances are such as to give rise to a legal claim under the Workmen's Compensation Act, 1906. Compensation is being paid to such persons, however, who are not otherwise provided for, in accordance with the undertaking which I gave in the House of Commons on June 28th last, of which I shall send my hon. friend a copy.

Dublin Aerodrome Absence of Workers.

MR. ARCHDALE, on May 7th, asked the Chief Secretary for Ireland whether the labourers at the new aerodrome near Dublin who absented themselves without leave from work on the late anti-Conscription holiday demanded the expulsion, on their return, of the few loyal workmen who remained at their post in this time of national danger; and what course the manager took?

The Under-Secretary of State for Air (Major Baird): The answer to the first part of the question is in the affirmative, and to the second part that of the four men who did not join the strikers two went back to work on April 29th, and the other two will be taken on again if they will make application.

Royal Air Force and R.E. 8 Machines.

COLONEL C. LOWTHER, on May 8th, asked the Under-Secretary of State to the Air Ministry whether aircraft known as R.E. 8 are still used on the Western Front; and whether this particular type of machine has been condemned as dangerously inadequate compared to German aircraft now in use?

The Under-Secretary of State to the Air Ministry (Major Baird): The answer to the first part of the question is in the affirmative, and to the latter in the negative.

Colonel Lowther: Is it not a fact that every expert and every pilot are unanimous in condemning this type of machine as a death-trap?

Major Baird: No, Sir.

Colonel Lowther: If I give my hon. and gallant friend the names of experts who do condemn this type of machine as a death-trap, will he look into the matter?

Major Baird: One or two people condemning it would not be sufficient. This is a matter which has been very carefully gone into. This machine has been used for a very long time with great success. I am afraid that my hon. friend has been misinformed.

Colonel Lowther: Can the hon. and gallant gentleman give the name of one expert who does approve of this type of machine?

Major Baird: Certainly—General Trenchard.

Mr. Joynton-Hicks: Have orders been given during the last four months for a further supply of these not altogether satisfactory machines, instead of very much better machines which my hon. and gallant friend knows of?

Major Baird: This is not a matter for discussion by question and answer.

"Practical Flying."

WHILE looping the loop is not exactly the sort of thing to encourage amateurs to indulge in, there are undoubtedly many who will later on be called to carry out this and other similar manoeuvres as part of the day's work who will welcome "Practical Flying" with its clear directions as to how it is done. Being a practised journalist, Flight Commander W. G. McMinnies has the happy faculty of expressing himself in clear and simple language, while Flight Lieut. E. L. Ford has rendered splendid assistance with his diagrammatic sketches. Both the collaborators have had considerable experience of flying in the R.N.A.S., and a good deal of the matter contained in the book was originally given in lecture form to officers undergoing their preliminary training. The

The squadrons have to be kept up to strength, and it is impossible to put in new machines and at the same time produce the total force.

Colonel Lowther: Are they making more of these particular machines?

Major Baird: They are making machines of this kind to keep up the squadron strength.

Colonel Lowther: Why not make Bristol fighters?

Skilled Mechanics.

MR. E. HARVEY asked the Under-Secretary of State to the Air Ministry whether skilled mechanics who have enlisted for service in the Royal Air Force in response to advertisements are being at once transferred to the infantry; and, if so, whether any steps can be taken to prevent this and to redress the hardship that has occurred in individual cases?

Major Baird: I am not aware that any such cases have occurred, but if the hon. member will furnish me with particulars I shall be very glad to investigate them.

Mr. Snowden: Will the hon. gentleman look on the notice paper and see a question in which the number, name, and regimental particulars of a soldier are given?

Major Baird: If any case is brought to my notice, I will promise to look into it.

R.A.F. and Secretary of State's Memorandum.

SIR HENRY NORMAN, on May 9th, asked the Prime Minister if, on April 9th, the late Secretary of State to the Air Ministry submitted a memorandum to him setting forth the changes he proposed to make in the reorganisation of the Royal Air Force in this country, with the reasons for those changes, and asking assent thereto; if this memorandum contained nothing of a secret nature except two figures; and, if so, to remove a prevalent misconception and in the interests of the Royal Air Force, will he communicate this memorandum, omitting any confidential figures, to the House, together with the reply from the War Cabinet conveying approval of the changes proposed and authority to carry them into effect?

Mr. Bonar Law: As the document to which the right hon. gentleman refers is a confidential Cabinet Paper, it would not be right for me to answer his question.

Sir H. Norman: Will the right hon. gentleman say if he will seek some method of conveying to this House and the public, including the Royal Air Force, at least the outlines of the reorganisation which is proposed, and of which the resignation of General Trenchard was only a part?

Mr. Bonar Law: That is a question which I think ought to be addressed to the Air Board as to general information. As to the question on the Paper, I can only say that a document intended for the Cabinet must be for the Cabinet alone.

General Trenchard's Position.

MR. ASQUITH, on May 13th, asked the Prime Minister whether, in view of his promise, any appointment in the Air Service has been offered to General Trenchard; and, if so, what is the nature of such appointment?

Mr. Bonar Law: I am glad to say that Major-General Trenchard has been offered and has accepted the command of a very important part of the British Air Force in France.

Secretary of State. Seat in Parliament.

MR. JOYNTON-HICKS asked the Prime Minister whether arrangements have yet been made for the Secretary of State for the Air Forces to receive a seat either in this or the other House of Parliament?

Mr. Bonar Law: I hope that an announcement will shortly be made on this subject.

Royal Air Force. Contracts and Supplies.

SIR M. BARLOW asked the Under-Secretary of State to the Air Ministry if he can say what is the relationship between the Air Ministry and the Ministry of Munitions with regard to the placing of contracts and the supply of materials for the Air Service?

Sir W. Evans: The relationship of the Ministry of Munitions to the Air Ministry with regard to supply is exactly the same as its relationship with the War Office. The Air Ministry usually, after consulting the Ministry of Munitions on the possibilities of supply, draws up the programme of requirements for aeroplanes, engines, and equipment other than actual armament. The Ministry of Munitions carries out the programme, and is responsible for design, for placing contracts, and for the whole business of supply. Concord and co-ordination are assured in both cases by members of the Army and Air Councils being members of the Munitions Council or vice versa.

R.A.F. Materials (Inspection, &c.).

SIR M. BARLOW asked the Under-Secretary of State to the Air Ministry what provision is made for the inspection of material supplied to the Air Service; and what arrangements, if any, are made for making contractors who supply defective materials responsible for those defects?

Sir W. Evans: I have been asked to reply to this question. Materials supplied for the Air Service by the Ministry of Munitions are purchased either from direct contractors or by them from sub-contractors. In either case, the material is fully inspected at the source of origin, with the exception of small quantities of material supplied by sub-contractors, which are inspected at the main contractors' works. The cost of replacing defective material falls on the contractor, and an excessive percentage of defective materials results in the loss of future contracts and even in the cancellation of existing contracts.

Treatment of an R.N.A.S. Prisoner.

MR. JOYNTON-HICKS asked the hon. member for Sheffield (Central Division) whether the Government has yet received from the German Government full details of the trial of Sergeant E. A. Boyd, R.N.A.S.; and, if not, or in the event of the Government not being satisfied with the reply, and in view of the fact that this man is working out his harsh sentence, will the Government at once notify the German Government of its intention to make reprisals unless Sergeant Boyd is forthwith released and treated properly as a prisoner of war?

Mr. Hope: No reply has been received from the German Government. The question of reprisals in this and other cases is now before the military authorities.

book is not intended for the expert pilot or anyone interested in the technical or theoretical side of aviation, but the prospective pilot will find it brimful of useful information presented in such a way that he can easily understand it. Forewarned is forearmed, and by studying the advice and hints in the chapters on elementary flying the budding Flying Officer will be able to avoid many of the mistakes commonly made by the beginner. Major-General W. S. Brancker, C.M.G., has written an introduction, and there is also a useful chapter on the medical aspects of aviation by Surgeon H. Graeme Anderson, M.B., Ch.B.

The book, bound in white cloth, is published by Temple Press, Ltd., at 3s. 9d. It can be obtained from "FLIGHT" Offices for 4s. 3d., post free.

AIRCRAFT WORK AT THE FRONT.

OFFICIAL INFORMATION.

British.

"Rain prevented flying on the 6th inst. until 5 p.m. After this hour some fighting took place, in which six hostile machines were brought down. One of our aeroplanes is missing. After dark 100 bombs were dropped by us on targets in the neighbourhood of Bapaume. One of our machines has not returned."

General Headquarters, May 7th.

War Office, May 8th.

"*Italian Front.*—The Royal Air Force has, since my last report, destroyed 17 hostile aeroplanes and brought down one out of control. Several of these have fallen in our lines. During this period we have lost no machines. Targets of military importance in rear of the hostile lines have been bombed, with good results."

"*Mesopotamia.*—A portion of our troops entered Kirkuk on May 7th without opposition. The Turks, who retired towards the Lesser Zab River, left 600 men in hospital in the town and also abandoned three damaged aeroplanes. Heavy rain has fallen."

General Headquarters, May 8th.

"On the 7th inst. flying was again impossible until after 5 p.m. owing to rain. The weather then cleared suddenly, and machines were sent out on reconnaissances and bombing flights. Four hundred bombs were dropped by our aeroplanes on different targets all along the front. Twelve hostile machines were brought down in air fighting, eight of which were accounted for in a big encounter in the neighbourhood of Douai. One German observation balloon was brought down in flames. None of our machines is missing."

General Headquarters, May 9th.

"On the 8th inst. the weather was fine, but little work in the air was possible south of Arras owing to the heavy mist which hung over the lines. On the northern portion of the front our aeroplanes were actively employed all day reconnoitring, taking photographs, co-operating with the artillery, and bombing. Ten tons of bombs were dropped by us on Le Cateau, Cambrai, Bapaume, and on the docks and mole at Zeebrugge. In the northern area strenuous fighting took place throughout the day. Twenty-two hostile machines were brought down and seven others were driven down out of control. Another German machine was shot down by machine-gun fire from the ground. Seven of our aeroplanes are missing. Owing to the mist, only a few of our aeroplanes were able to go out after dark. A ton of bombs were dropped, however, on the railway stations at Douai and Marcoing. All our machines returned."

War Office, May 9th.

"*Salonica.*—Early on the morning of May 1st five of our machines bombed the aerodrome at Rudova (in the Vardar Valley, north-west of Lake Doiran). One large shed was destroyed, and bombs were observed to fall among 12 aeroplanes on the ground. The same aerodrome was again bombed on the evening of May 7th, when a direct hit was obtained on a workshop and bombs were seen to fall close to 16 machines which were counted on the ground. On May 8th Drama aerodrome was bombed early in the morning and again at 4.30 p.m. Considerable damage was caused, and all the bombs dropped were seen to burst among the hangars and the machines lying on the ground. All our aeroplanes returned safely. On May 4th a hostile machine was brought down behind our lines near Dimitric (at the head of Lake Tahinos), the German pilot and observer being killed."

General Headquarters, May 10th.

"On the 9th inst. cloudless weather enabled our aeroplanes to carry out a full day's work. Machines were in the air all day, observing for the artillery, reconnoitring, and taking photographs of the enemy's back areas. Our bombing machines displayed great activity on the whole front. A total of over 24 tons of bombs was dropped by us on different targets, including important railway stations at Tournai, Douai, Marcoing, Chaumes, and Cambrai, and the billets of Carvin, Péronne, and Chipilly, and the docks at Zeebrugge. Fighting in the air took place more or less continuously, but became particularly fierce towards dusk. Twenty-seven German machines were brought down and 12 others were driven down out of control. A hostile observation balloon also was destroyed. Six of our machines are missing. During the night 4½ tons of bombs were dropped by us on the docks and the entrance to the canal at Ostend, and a further 3½ tons on Péronne, Chaumes, and Bapaume. All our machines returned."

War Office, May 11th.

"*Mesopotamia.*—On May 8th 55 prisoners were captured near Kirkuk, and on the same day our aeroplanes attacked Turkish camps at Fathah (on the Tigris, 32 miles north of Tekrit). A large number of bombs were dropped, and hostile troops and transport were fired on with machine guns. A Turkish aeroplane was shot down and destroyed near the junction of the Lesser Zab with the Tigris."

General Headquarters, May 11th.

"On the 10th inst. low clouds and mist prevented flying till 5 p.m., and after this hour the weather cleared on a small part of the front and great aerial activity took place in this sector until dark. Over 14 tons of bombs were dropped by us on Péronne, Bapaume, Thielt, Douai, Zeebrugge, and the docks at Bruges. Hostile scouts were very active and made repeated attacks on our bombing machines. Eight German aeroplanes were brought down in air fighting and six others were driven down out of control. Nine of our machines are missing. One of our aeroplanes reported missing on the 7th inst. has since returned."

General Headquarters, May 12th.

"On the 11th inst., except for a short period of clear weather in one sector, in which bombing and reconnaissance work were carried out by our aeroplanes, the whole front was enveloped in mist throughout the day. One hostile machine was brought down in air fighting. Two of our machines are missing. It has been ascertained that three other German machines were brought down on the 10th inst. in addition to the eight previously reported."

Admiralty, May 13th.

"During the period May 6th–12th inclusive, Air Force contingents working from Dunkirk carried out successful bombing operations against Ostend docks and seaplane base, Zeebrugge Mole and lock gates, and enemy shipping in the vicinity. Several direct hits were obtained on sheds on Zeebrugge Mole, and a large shed at Ostend seaplane base was completely burnt out. In the course of offensive patrols six enemy machines were destroyed and a further two driven down out of control. One of our machines is missing."

"On May 10th one of our seaplanes in the North Sea sighted a Zeppelin on patrol. An indecisive action lasting half an hour took place, and ended in the retreat of the Zeppelin to its base."

General Headquarters, May 13th.

"On the 12th inst. flying was again impossible until evening. Visibility was then excellent, and our aeroplanes were able to carry out a great deal of successful

work in conjunction with the artillery. Over eight tons of bombs were dropped on targets in the neighbourhood of Menin, Armentières and La Bassée, and on the docks at Bruges. In air fighting six hostile machines were brought down. One of our machines is missing. During the night 14 tons of bombs were dropped on the railway stations at Don, Marcoing and Chaumes; on Bapaume, Péronne, and on the docks at Bruges. One of our machines has not returned."

War Office, May 13th.

"*Mesopotamia.*—On May 12th our aeroplanes bombed hostile camps between Alton Keupri and Erbil [Arbela] and also on the Tigris."

French.

Paris, May 7th.

"During May 6th four German aeroplanes were brought down by our pilots in aerial combats and ten were seen to fall in a damaged condition in their own lines. During the same day our bombarding aeroplanes dropped 4½ tons of bombs on the railway stations of Flaville-Martel, Mennessis, Ham, Guiscard, Noyon, and Vermand."

Paris, May 9th.

"*Salonica.*—Allied aviators have bombarded the aerodrome at Drama and the cantonments at Beranci."

Paris, May 10th.

"Lieutenant Fonck, during two patrol flights yesterday, brought down six German biplanes—the first two in 10 seconds, the third five minutes afterwards, and the last three in the course of his second patrol."

Paris, May 12th.

"On May 10th, in spite of the bad weather, our chasing aeroplanes were active. Two German machines were brought down and eight were badly damaged. On May 11th a German captive balloon was set on fire by our pilots. On May 10th and 11th our bombardiers dropped 7,000 kilos of projectiles on enemy railway stations, dumps and cantonments, especially in the region of Noyon, Chauny, and Fleury le Martel. At the last-named place several fires were observed."

Belgian.

Havre, May 7th.

"This morning, after a violent bombardment, a party of the enemy attempted to capture a trench in the region of Nieuport, while enemy aeroplanes fired with machine-guns on our advanced lines and dropped bombs on the town of Nieuport. The enemy attempt was unsuccessful."

Havre, May 8th.

"One of our airmen set fire to two German balloons near Zarren. An enemy machine was brought down in our lines by one of our machines. It crashed near Westvleteren."

Havre, May 9th.

"Enemy aeroplanes bombarded several of our cantonments without success. Our aeroplanes were very active during the day."

Italian.

Rome, May 7th.

"British airmen shot down three hostile machines in the Motta di Livenza district, and bombed the enemy's rear areas between the Astico and the Brenta."

Rome, May 9th.

"British airmen bombed the aviation ground at Motta di Livenza."

Rome, May 10th.

"Aircraft activity was intense over the fighting lines and back areas. Four enemy machines were brought down and one forced to land."

Rome, May 11th.

"Intense aircraft activity. One of our airships dropped a ton of bombs on Mattarello railway station. Three hostile aeroplanes were forced to land, and one observation balloon was set on fire by British airmen."

Rome, May 12th.

"Seven hostile machines were brought down in aerial fights."

German.

Berlin, May 9th.

"In aerial fighting during the last few days, and by our anti-aircraft guns, the enemy lost 37 aeroplanes. First Lieutenant Schleich brought down yesterday three enemy machines, and thus achieved his 26th, 27th and 28th aerial victory."

Berlin, May 9th.

"Strong enemy flying squadrons bombed the mole and the village of Zeebrugge at noon and in the evening. No military damage was done."

"Two enemy aeroplanes were shot down by our airmen on the land front and another one on the sea."

Berlin, May 12th.

"In aerial fighting, during the last two days, 19 enemy aeroplanes were shot down. Twelve of them were brought down by the fighting echelon formerly led by Baron von Richthofen."

Lieut. Loewenhardt gained his 20th and 21st aerial victories."

Berlin, May 13th.

"The losses of enemy aerial forces on the German front during the month of April amounted to 15 captive balloons and 271 aeroplanes, of which 122 fell behind our lines, whilst the others were seen to fall beyond the enemy's positions. "During aerial fighting we lost 123 aeroplanes and 14 captive balloons."

Austrian.

Vienna, May 12th.

"Field Pilot Senior Lieut. Link Crawford on the 11th inst. shot down two English aeroplanes, and thus gained his 22nd and 23rd aerial victories."

Bulgarian.

Sofia, May 6th.

"In the Moglena region and west of the Vardar two enemy aeroplanes were brought down."

Sofia, May 7th.

"East of the Tchernia a German airman brought down an enemy aeroplane, which fell in flames behind our positions."

Turkish.

Constantinople, May 5th.

"East of the Jordan . . . our airmen, in spite of violent counter-attacks, assailed the enemy untiringly."

"West of the Jordan, as the result of an air fight, an enemy aeroplane was brought down in flames."

Constantinople, May 8th.

"Our aeroplanes attacked early in the day the enemy's camp near Jericho."

Constantinople, May 10th.

"In the coast sector our airmen brought down two machines which fell in flames."

A Fine Collection of Models.

THERE are few people to whom a collection of models does not make an appeal, and it is not astonishing that the wonderful collection of models of all sorts and sizes which is now housed in the showrooms of Messrs. Thomas Parsons and Sons, at 315-317, Oxford Street, W.1., has already netted

a goodly sum for the coffers of the War Seal Foundation. Those who visit the exhibition between now and June 1st, apart from helping on the good cause, have the opportunity to win a souvenir in the shape of a model of Capt. Leefe Robinson's aeroplane. Recent additions to the collection include two Gotha models, and it is anticipated that a model of a Handley Page will shortly be on view.

LEGAL INTELLIGENCE.

German Hydrogen Patents.

In the Patents Court, on May 9th, the Comptroller-General of Patents (Mr. Temple Franks) heard an application by Messrs. Samuel Cutler and Son, Ltd., engineers, for a licence to use six German patents for the manufacture of hydrogen gas. It was said that one of the patents, in an alternative form of manufacture, claimed the discovery that manganese iron ores could be used as reaction substances in the production of hydrogen.

It was stated by the applicant that he was manufacturing to supply the Admiralty for balloons and airships, and the time was coming possibly when private persons would want to set up works at different points for the supply of hydrogen gas.

The Comptroller intimated that he thought the patents should be granted and progress made with the work at once.

CORRESPONDENCE.

Flying Boat Patents.

[1959] With reference to the Letters Patent No. 1256878 granted to Mr. Glenn H. Curtiss by the United States Patent Office recently published, it may interest your readers to be acquainted with the fact that a hull so constituted was built and tested by way of an experiment on the Twin-Engine White and Thompson Flying Boat which was destined for the Circuit of Britain Race to be held at the end of 1914, but postponed by the outbreak of war.

This machine was designed before I joined the above firm as chief designer, and on trial she refused to attain sufficient speed on the water to lift or even plane, and although I tried various means of curing the trouble, it was not until planing extensions or fins were built into the hull that this was effectively done.

The above experiments were carried out in September and the beginning of October, 1914, and as witness thereto I can do no better than state that Mr. E. C. Gordon England, now General Manager to Messrs. Sage, Ltd., Peterborough, was pilot during all the above trials, and was accompanied by me, besides various members of Messrs. White and Thompson, Ltd.

I therefore assume that all designers of flying boats in this country who desire to use lateral planing fins on their hulls are quite at liberty to do so, as it was not until December 11th, 1914, that Mr. Curtiss applied for his patent.

F. PERCY HYDE BEADLE.

Totterdell's Hotel, Portsmouth, May 13th, 1918.

SIDE-WINDS.

ALDERMAN JOHN MARSTON, of Tettenhall, Wolverhampton, and of Coed Emrys, Colwyn Bay, chairman of the Sunbeam Motor Car Co., and head of J. Marston, Ltd., a member of the Town Council and twice mayor, who died on March 8th, aged 81, left a fortune of the value of £211,330, the net personalty amounting to £203,086. In his will Mr. Marston expressed the hope that his sons and grandchildren would take up municipal life, "from which I have derived so much pleasure and information since I had the honour to become a member of the Wolverhampton Corporation."

THE vacancy on the Board of Directors of the Sunbeam Motor Car Co., Ltd., has been filled by the Directors electing Mr. Charles N. Wright, of the well-known firm of Fowler, Langley and Wright, to the office. Thus the Board becomes greatly strengthened on the legal side, a matter of no mean importance in these days when industry is compassed about with legal restrictions at every stage and turn. Mr. Wright has lived all his days in Wolverhampton, his father and both his grandfathers having been iron masters with works in the town, but the whole of his own career has been concerned with law. In 1888 he was articled to Mr. Henry Hartley Fowler (afterwards Sir Henry Fowler, M.P., and later Viscount Wolverhampton), and he was President of the Wolverhampton Law Society in 1912.

Those who have to convert metric weights to English weights or vice versa will be grateful to the Hoffman Manufacturing Co., Ltd., of Chelmsford, for their sheet of conversion tables. It is a companion to the sheet of linear conversion tables issued some years ago by the firm. In both cases the metric figures are printed in red and the English equivalents in black, thus making for clearness. Any reader who would like a copy of either or both should write to the firm at Chelmsford, mentioning "FLIGHT."

WE understand from Mr. A. H. Botwright that he has resigned the Chairmanship and Directorship of the London Aviation Co., Ltd., of 29, Charlotte Street, Shoreditch, and has no longer any connection with that company.

"AIRCRAFT SUPPLIES," the fortnightly House Journal and Stock List of the Aircraft Supplies Co., Ltd., has undergone some re-arrangement, principally with a view to making it more useful to clients of the firm. It is really extraordinary what a large number of A.G.S. parts are listed (in stock) and illustrated in the current number. In the issue for May 7th there is an article by Mr. G. H. Mansfield, the Ascol Managing Director on "What are Aeroplane Accessories." Those engaged in the aircraft industry are reminded that a written application on business or official stationery will procure, free of all cost, a copy of "Aircraft Supplies" regularly each fortnight, it being sent off on alternate Tuesdays.

NEW COMPANY REGISTERED.

CROMPTON HAUMAN ENGINEERING CO., LTD.
—Capital £2,000, in £1 shares. Acquiring business carried on by G. Crompton at 55, High Street, Lincoln, aeronautical, marine and general engineers, metal merchants, &c. First directors: G. Crompton and J. E. Hauman.

PUBLICATIONS RECEIVED.

Vertical Gas Engines. The Vacuum Oil Co., Ltd., Caxton House, Westminster, S.W.1.

Ditchling Beacon. By Alfred Bathurst Norman, R.F.C. London: Sidgwick and Jackson, Ltd., 3, Adam Street, Adelphi. Price 1s. 6d. net.

Captain Ball, V.C. By Walter A. Briscoe and H. Russell Stannard. London: Herbert Jenkins, Ltd., 3, York Street, St. James's. Price 6s. net.

Aeronautical Patents Published.

Applied for in 1917.

The numbers in brackets are those under which the Specifications are printed and abridged, &c.

Published May 9th, 1918.

5,566. A. J. FORTESCUE. Aerial machines of heavier-than-air type. (106,092.)
8,974. A. R. MILLER. Level indicator for aeroplanes, &c. (114,724.)
14,258. H. THOMASON. Machine for shaping propeller blades. (114,771.)

Published May 16th, 1918.

1,111. J. W. AND W. J. WILLIAMS. Heavier-than-air flying machine. (114,858.)
3,978. L. T. DELANEY. Radiator for aeroplanes, &c. (114,869.)
5,443. E. H. MOORE. Alighting gear for aeroplanes. (114,891.)
6,593. J. R. PORTER. Aeronautical machines. (114,919.)
7,698. J. VEDRINES AND L. L. ASTOUX. Landing wheels of aeroplanes. (107,009.)

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IN order that "FLIGHT" may continue to be published at the usual time, it is now necessary to close for Press earlier. All Advertisement Copy and Blocks must be delivered at the Offices of "FLIGHT," 36, Great Queen Street, Kingsway, W.C. 2, not later than 12 o'clock on Saturday in each week for the following week's issue.

If you require anything pertaining to aviation, study "FLIGHT'S" Buyers' Guide and Trade Directory, which appears in our advertisement pages each week (see pages lii, liii, and liv).

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